

OCTOBER '59

MODERN TEXTILES

MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES



Colonial's
DEAN LEWIS
has spent a
busy happy
life as a
boss dyer —
story page 33

THIS MONTH:

Guide to AATCC convention

Sprayed fibers—a new advance

How to process Orlon tow

An American knitter in Russia

ALONG WITH 14 OTHER TIMELY ARTICLES AND EXCLUSIVE REPORTS

VIB

*Vacuum Impregnated Bobbin**



 DRAPER CORPORATION

* Patents Pending

**"We had a problem . . .
SONOCO solved it!"**



THE NEED: A cone surface which would prevent sloughing

Large packages of heavy cotton carpet yarn were being wound on Sonoco Super Cones. In some instances waste was occurring because the yarn sloughed off. Investigation showed that a different type cone surface was needed.

Drawing on past experience with similar problems, Sonoco quickly found the answer by developing a cone with heavy grooves placed at the critical points on the cone taper.

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Our 60th year
1899 - 1959

SONOCO
Products for Textiles
SONOCO PRODUCTS COMPANY

MODERN TEXTILES MAGAZINE

October, 1959 Vol. 40, No. 10

Modern Textiles Magazine

Established 1925

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MILLION SPINDLES
NOW EQUIPPED WITH
ROBERTS HIGH DRAFT

ROBERTS SPINNING NEWS

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SANFORD,
NORTH CAROLINA

WM-2

SANFORD, NORTH CAROLINA, U.S.A.

1959

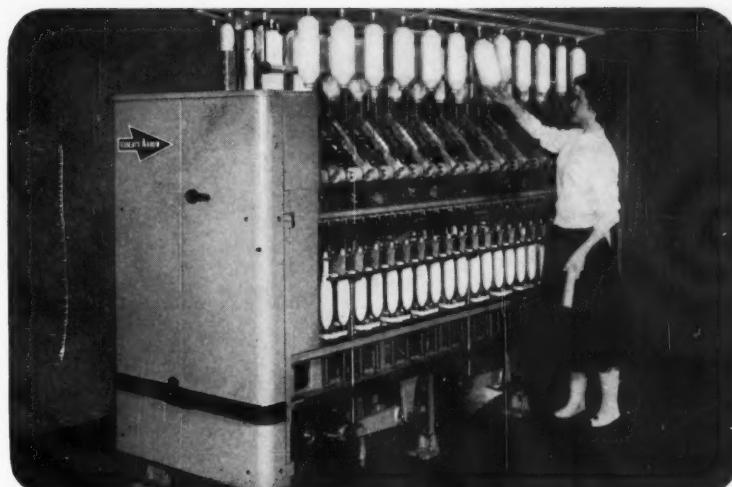
ARROW WM-2 LONG FIBER SPINNING FRAMES OFFER WIDEST YARN MAKING VERSATILITY

A dynamic program of new product design, advanced styling and aggressive merchandising is underway by all segments of the Textile Industry.

Knitting yarns of higher quality and greater interest are being called for in worsted, synthetics and blends. Finer weaving yarns up to 2 ply 80's are being called for and a great many blends are currently being explored. The longer fibers are in wide demand and the next few years should see a substantial boom in this field.

The demand for high bulk knitting yarns and the finer weaving yarns plus all of the newer fabric effects being created require fiber lengths from 3 to 8 inches long.

ARROW WM-2 frames are suitable for making yarns in any fiber length from 1½ to 8 inches. They provide great versatility in handling 100% synthetics, blends of synthetics, 100% worsteds and blends of worsted with synthetics in this range. Better quality yarns with greater evenness, bigger package sizes and higher production speeds are produced on ARROW frames.



- Spins yarn from any natural or synthetic fiber or any blend.
- PermaSet Drafting handles any fiber length from 1½ to 8 inches
- No roll setting changes needed at any time
- Great versatility for changing yarn numbers, twist, draft, ring size, and spindle speed
- Drafts as high as 24 on worsted, 60 on synthetic
- Produces yarn with better evenness and greater breaking strength
- Ball bearing top and bottom rolls eliminate all lubrication in drafting zone
- Almost ideal spinning conditions from delivery roll to spindle
- Runs at higher front roll, traveler and spindle speeds
- Reduces ends down by more than 50%
- Puts twice as much yarn on the bobbin as older frames
- 12-inch bobbins reduce winding costs
- Very rugged, most durable machine ever built for yarn spinning
- Frame is built in the wide-stance 36-inch width
- Uses ball bearings at every moving, turning or oscillating motion
- Substantially lowers electric power consumption
- AeroCreel for single or double roving
- Frame arranged for practical application of overhead cleaning and vacuum floor sweeping

Roberts ShortFlo System for Making Long Fiber Yarns

Roberts Company offers complete technical service in adapting its ShortFlo System for the production of long fiber yarns. This includes the complete yarn manufacturing process starting with tow converters, blending machines, pin drafting, roving frames, spinning frames, winders and twisters.

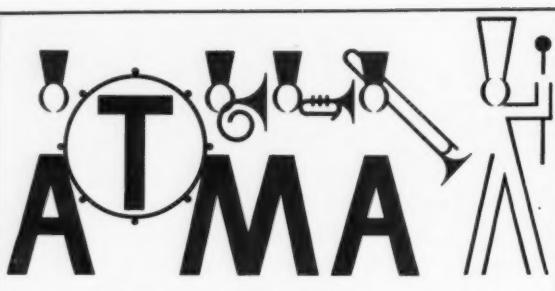
Where mills have existing equipment, full consideration is given to

utilizing it whenever possible. Or, if a new long-fiber program is planned, all machinery can be specified, and the complete yarn organization set up.

The ShortFlo System for making long fiber yarns requires a minimum number of processes. Many doublings are provided to insure exceptionally good blending of fibers, improved evenness and better strength.

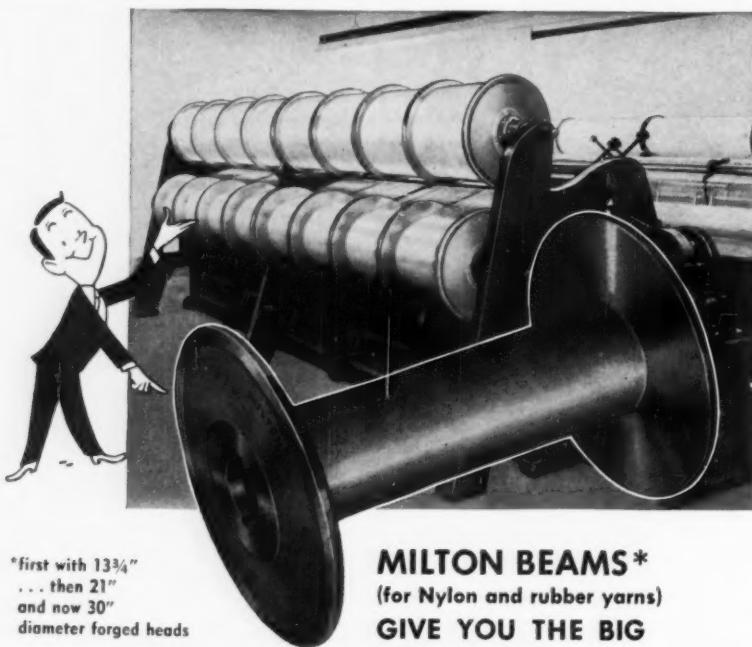
Milan Show Report Next Month

In order to make our report on the International Textile Machinery Exhibition staged in Milan in September as broadly informative as possible we have delayed its publication until next month. We planned to rush it through for this issue. But so many interesting and new things were seen at the show by our special European correspondent, we thought our readers' interest would best be served by postponement. So watch next month's MTM for our special report on the Milan show.



Parade of Progress

American Textile Machinery Exhibition - International
May 23-27, 1960



*first with 13 3/4"
... then 21"
and now 30"
diameter forged heads

MILTON BEAMS*

(for Nylon and rubber yarns)

GIVE YOU THE BIG
BONUS OF

SUPER STRENGTH

The super strength of Milton's forged head Tricot and Raschel Beams is no idle claim—it's been proven by yarn producers, big mills and small mills alike!

They're light in weight, yet rugged in design to give true dimensional stability without objectionable deflection or distortion. Milton's forged, heat-treated aluminum alloy heads and extra heavy barrels become a one-piece beam by the continuous weld process first introduced in the field by Milton. Trapped ends of yarn or misalignment of keyways are eliminated because there are no mechanical joints!

You name the yarn . . . monofilament, fine denier, low turn or high twist—synthetics or rubber, Milton gives you true-running, well balanced beams to handle unprecedented yardages and extreme pressures!

WRITE FOR FREE BULLETINS . . . No. 59-A on Light Metal Beams and No. 54-S on Steel Beams. The Milton line includes warp beams for broad, narrow fabric, velvet and carpet looms, as well as light metal raschel, tricot and section beams.

Thirty Years of Dependability in Yarn Beams



Universal Buys Holt

Universal Winding Co. purchased the business and fixed assets of Thomas Holt, Ltd., Rochdale, England, textile machinery and manufacturing firm. The Rochdale plant will manufacture the current Holt line plus certain Universal machines which previously were not saleable abroad because of price.

Three Mills Liquidated

Three cotton mills formerly owned by Canadian Cottons Ltd. are being liquidated. Textile Machinery Co., Hamilton, has appointed Republic Textile Equipment Co. of New York as exclusive sales agent. Textile Machinery to be sold includes 80,000 spindles, 1,200 looms, 12 opening and picking lines, 400 cards, yarn dyeing cloth finishing and continuous indigo dye range. For further information write the editors.

James Talcott in Atlanta

James Talcott, Inc. has formed its first southeastern sales subsidiary, James Talcott Southern, Inc. in Atlanta. The new firm will specialize in the financing of installment sales of income-producing machinery such as heavy production equipment, textile machinery, laundry equipment etc. Eugene Carroll and John Hart have been named operating vice presidents.

New Caprolactam Plant

DuPont has started construction of a plant in Beaumont, Texas which will produce annually 50,000,000 pounds of caprolactam, an intermediate chemical for nylon 6 fiber and plastics. Also to be produced at the plant is the co-product cyclohexylamine. Both will be for sale primarily outside the company. When the plant begins operations at the end of 1960, it will produce the caprolactam by a new process resulting from technological improvements and the use of low-cost petroleum derivatives, according to DuPont.



Vitel

means "Freedom"*

They're calling it "Independence Hall"—the Point Pleasant plant in Apple Grove, West Virginia, where Goodyear makes VITEL, newest of polyester resins. Dedicated to the proposition that *we're* in the chemical business and *you're* in the textile business. That's why Goodyear makes only the resin—does not spin the fiber. Right now, Beaunit Mills, Inc., Fibers Division, is spinning VITEL resin into VYCRON fiber—offering you these important properties:



- Exceptional yarn strength—good fiber-to-fiber cohesion.
- Outstanding dyeability and colorfastness.
- Excellent wrinkle resistance—ideal for wash-and-wear.
- Easy processability on standard milling systems.

For full details, write:
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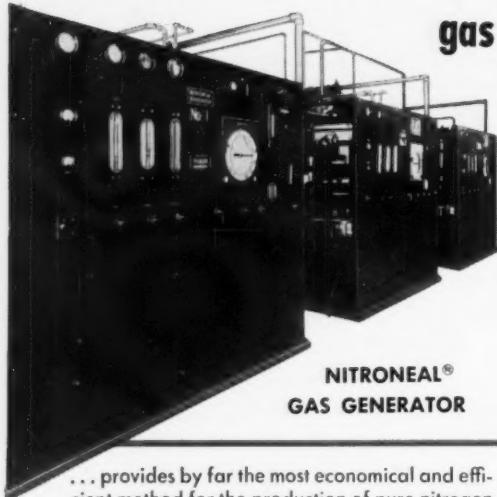
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CONQUEST IN TEXTILES

With increased research, the textile industry is uncovering many new, practical and economical uses for RANDO-WEB® structures. Already known is the fact that nonwovens

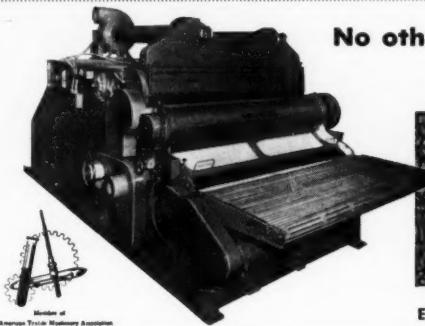
permit an unlimited variation of fibre blends . . . that nonwovens are light in weight, washable, dry cleanable, smooth, soft, firm, supple, thick or thin, wrinkle resistant to a degree that cannot be achieved by conventional finishing techniques. All are important performance properties to manufacturers, retailers and consumers alike.

In the illustration are shown just a few of the many products using engineered nonwovens in whole or part.

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COAT • SHOES • HANDKERCHIEF • TIE •
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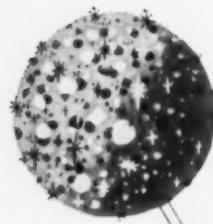


No other machine in the world
can make uniform random webs like it.

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Parf^é

**pinpoints one of the major
elements of fashion . . .**

COLOR

Women's fashions are concerned primarily with three major elements: line, texture, and color.

Parf^é . . . the new yarn creation by Bemberg . . . brings a new dimension to the vital factor of color. Color is spaced intermittently along the entire length of Parf^é in two effects: a long span of color with long space intervals, and a short span of color with short space intervals.

With amazing ingenuity, fabric stylists have combined Parf^é with other yarns, natural and synthetic, and with itself (used in both warp and filling) for unique and original color effects with exciting fashion possibilities.

Because the colors of Parf^é are rendered as fast as solution dyed shades by a special Bemberg process, fabrics of Parf^é may be overdyed for spectacular styling achievements.

Fabrics of Parf^é are washable, color fast, and shrinkage controlled and are available with certified wash-and-wear performance, if desired.

Bemberg
ARISTOCRAT OF RAYON YARN

Parf^é is American Bemberg's registered trade mark for cuprohexammonium rayon yarn.

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for the dyeing of acrylic fibers.

LUMATEX® PIGMENTS – water phase printing emulsion and water dispersions for printing and dyeing, with extreme fastness properties.

PILATE® DYESTUFFS – metal complex dyes.

NEOPILATE® DYESTUFFS – metal complex dyes requiring only small amounts of sulphuric acid in dyeing.

ORTOLAN® DYESTUFFS – neutral dyeing premetallized colors.

PALANIL® DYESTUFFS – specially designed for dyeing and printing of polyester fibers.

PALACET® DISPERSE DYESTUFFS

VIALON® DYESTUFFS – specially designed for dyeing and printing of nylon.

In the auxiliary line a complete range of specialty products for pre-treatment of textiles, assistants during the dyeing operation and products for finishing. Auxiliary products for continuous dyeing of vats on poorly absorbent materials as well as for the prevention of migration.

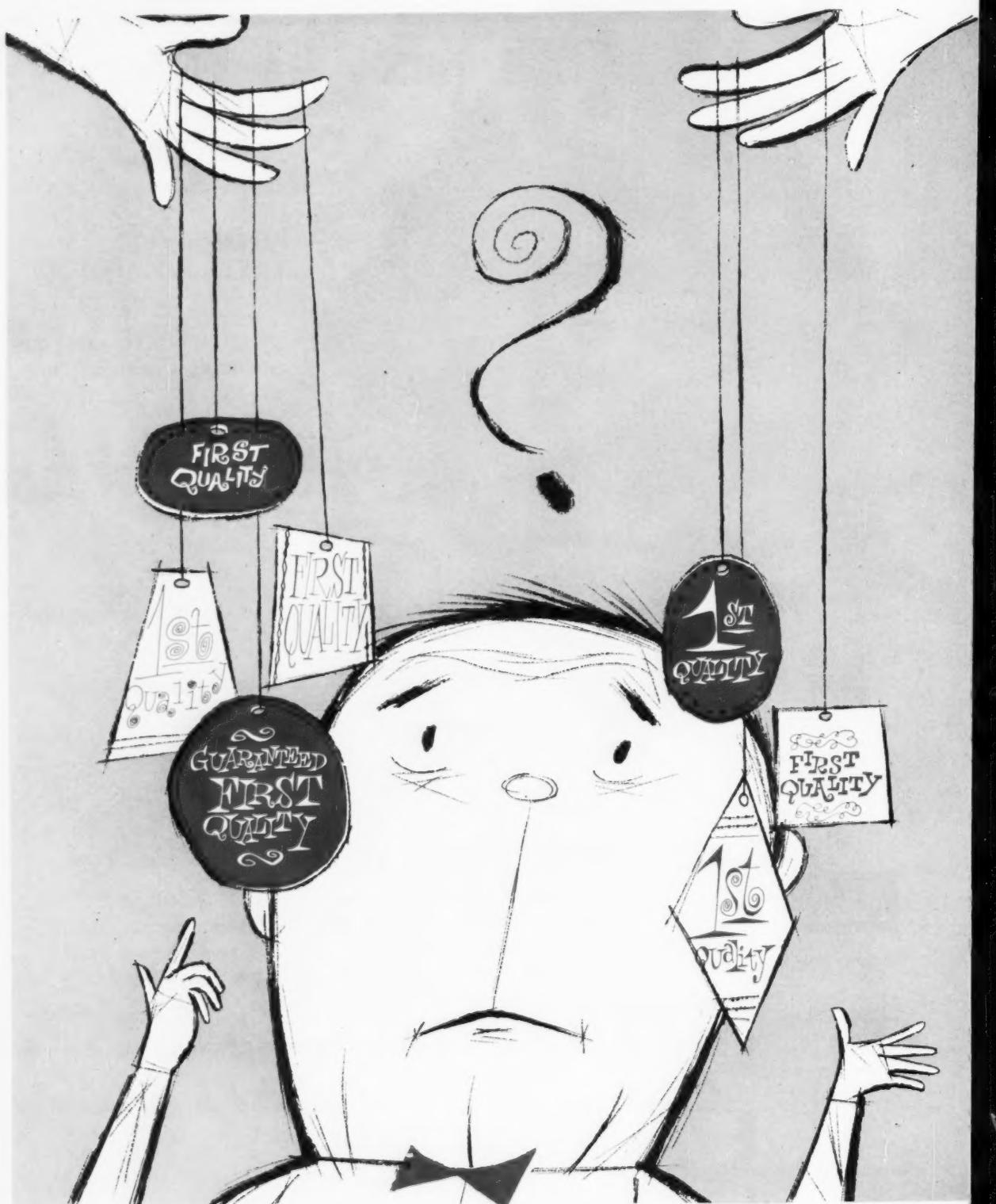
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they mean by first quality?

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It may be *labeled* "first quality." But the yarn you're getting has imperfections that end up giving you *too many* fabric seconds!

Only I.R.C. Continuous Process rayon yarn can be virtually flawless, because it alone is made by a *continuous* process...a process that carries the yarn in one continuous vertical flow from the spin-bath to a twisted package.

No hands damage it...because no hands touch it en route!

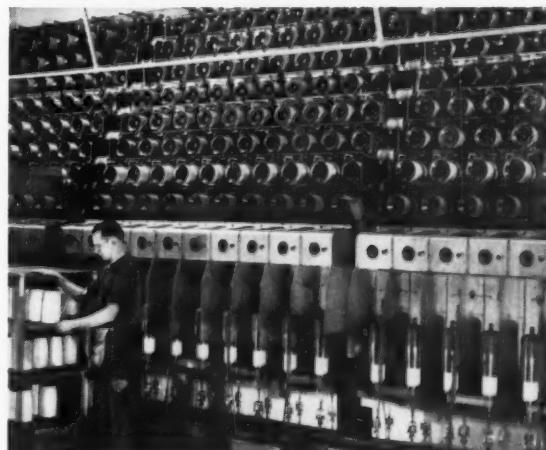
You are not robbed of first class profits on first quality goods.

Yet you pay no more for I.R.C. Continuous Process rayon yarn, yarn that's as perfect and uniform as it is mechanically possible to produce.

You pay no more...and it saves you plenty!

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*Certification mark of Tyrex Inc. for viscose tire yarn & cord.



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ON CONES

ON TUBES

ON BEAMS

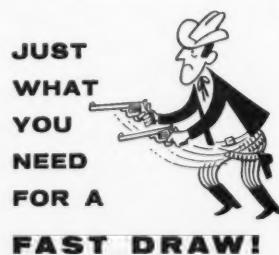


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WITH FAST PATTERN CHANGES**

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AMERICAN
TEXTILE MACHINERY
EXHIBITION
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MAY 23-27, 1960



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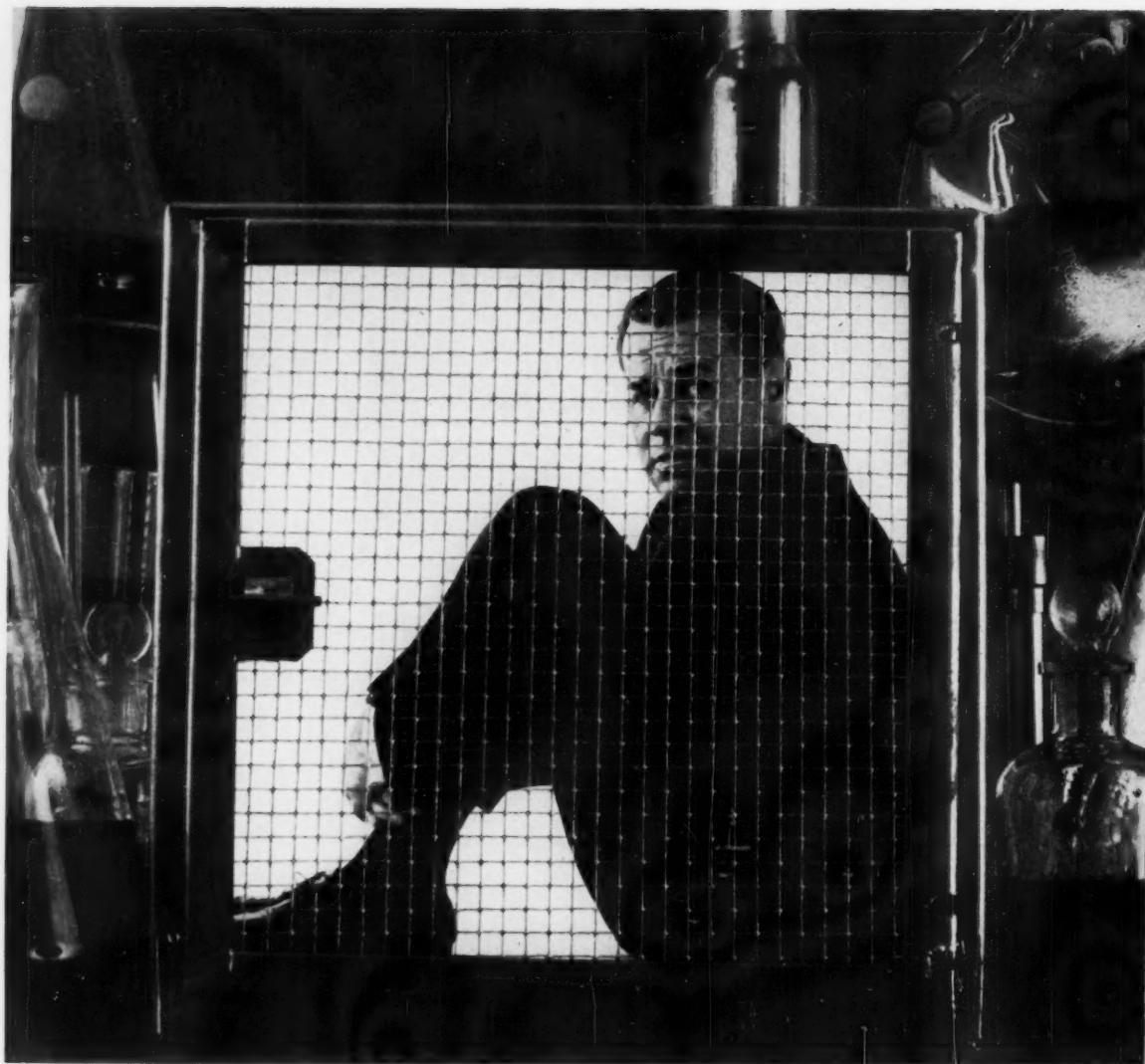
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Is it a proven fiber—or are you the guinea pig?

Many a fiber that flourishes in the test tube, pratfalls when put to practical consumer use.

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Better than 9 out of 10 of your best consumer customers know Acrilan.

They know it—and they buy it. Blankets of 100% virgin Acrilan outsell anything else in their field. Wash & wear garments made with Acrilan are racking up laudable figures. ACRILAN® carpet (made with Chemstrand's acrylic carpet fiber) is rolling up successes for the many fine mills making it. This talented fiber is now established and *proven* in area after area of textiles—backed by consistent, compelling advertising that has sold America.

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With Acrilan every answer is *yes*.

*Registered trademark of The Chemstrand Corporation for its acrylic fiber

ACRILAN

ACRILAN
ACRYLIC FIBER

Chemstrand makes only the fiber; America's finest mills and manufacturers do the rest.

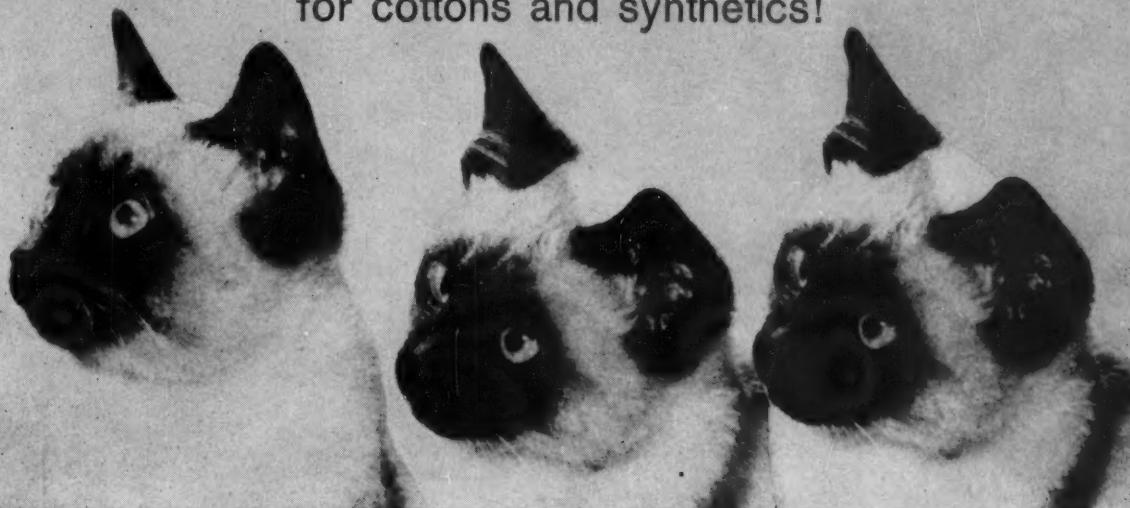
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for cottons and synthetics!



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non-chlorine retentive — does not yellow white fabrics even at elevated temperatures
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- ◆ good durability to washing when used in resin bath

POLY-IONIC Softeners are polyethylene emulsions, compatible with thermo-setting resins. They disperse readily in the bath and apply easily on a padder.

The three types — Non-ionic, Cationic and Anionic — offer you a range of outstanding softeners to meet your specific needs.

Write for Technical Bulletin and samples



ARKANSAS CO., INC. NEWARK, NEW JERSEY

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Photograph by courtesy of Transparent Paper Limited, Bury

at nearly 7 feet a second

INCREASED PRODUCTION

Designed and manufactured in close collaboration with the industry, Dobson & Barlow's new Viscose Transparent Film Machine, shown here in operation, produces 55" wide film in 1,000 lb. finished reels. The machine is designed to run at speeds up to 400 feet per minute. A number of these machines have been supplied to the Bridge Hall Mill of Transparent Paper Limited, Bury, for their re-equipment programme. These high production figures are made possible by 8-pass treatment tanks, greatly accelerated cylinder drying and improved reel tensioning.

IMPROVED QUALITY WITHOUT WASTE

Specially prepared roller surfaces, a new drying system and the careful attention given to the finish of all contact parts ensures exceptionally smooth film of regular thickness, and virtually no waste.

NEW PROCESSING ECONOMIES

An oil-immersed gear box drive to each treatment tank, improved arrangement of rollers, protection against corrosion, and general machine accessibility make definite economies in maintenance costs.

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A colorful conclusion for woolens . . . **Amacid* and Chromaven* Dyes**

Capture the spirit of the season with all your woolen goods . . . use AMACID and CHROMAVEN DYES. Available in a complete range of lively hues, Koppers select dyes are fast to sunlight, washing, perspiration and dry cleaning. You'll find, too, that these dyes are easily applied, and that they meet specific color demands for every type of

wool dyeing—yarn or piece goods. So specify AMACID and CHROMAVEN DYES and get the color treatment you want . . . prize woolens dyed to stay vibrant.

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VMA 6662

she can feel the difference . . .



when it's nylon by **ENKA** . . .

This young lady doesn't know *why* textured sweaters of Enka nylon feel softer, more luxurious and fit so flatteringly. Nor does it matter to her. Amazing how clever a girl can be—without knowing a molecule from a molehill!

Molecules, as a matter of fact, are the reason why Enka nylon yarn is so perfect for textured yarns. As a result of its different molecular structure, the yarn contains a new softness, wondrous resiliency and greater absorbency. Sweaters become infinitely more comfortable to touch and wear. And—Enka's

absorbency means dyes saturate the yarn quickly and evenly. Dark shades reach an incomparable depth of color. All shades are sharp, clear, uniform.

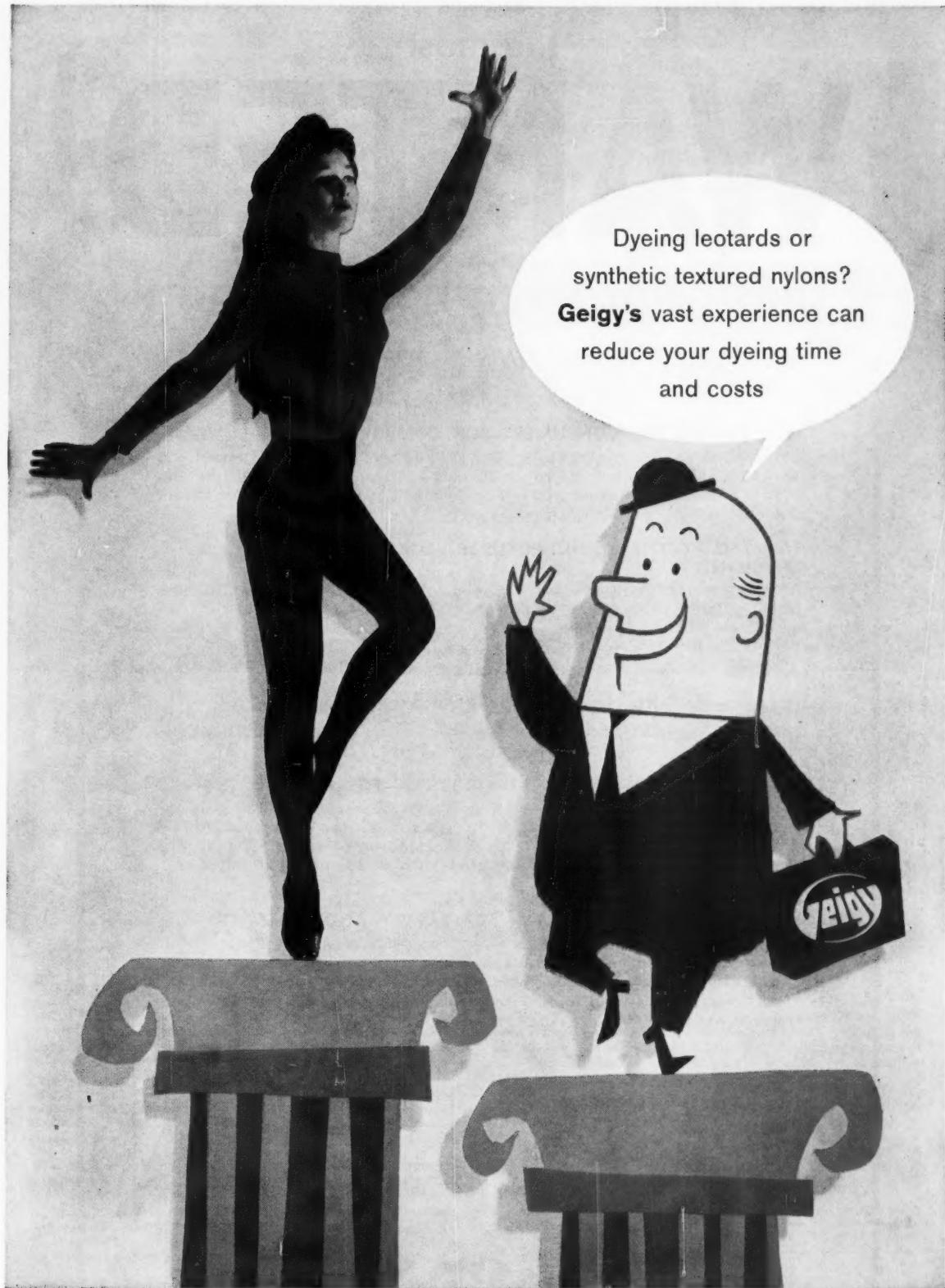
Whether you knit sweaters or half-hose, tights or stockings—get the full story of Enka nylon's unmatched versatility. Learn about Enka's active, aggressive new Customer Service Program—featuring top national advertising, merchandising and publicity. Call A. B. Harris, Jr., Nylon Product Sales Manager in New York at OXFORD 7-6141, Ext. 26. Or—contact the Enka sales office nearest you.



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yarns



Geigy Dyestuffs

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the most

WANTED:

- finish since synthetics began!
- ASTON ANTI-STATIC FINISH—FOR ALL SYNTHETICS

WANTED BY THE CONSUMER—FOR COMFORT

Think of offering slips that never cling or ride up from static! Dresses and sleepwear that never become hot or clammy . . . that throw off moisture and heat to comfortize for all-season wear . . . "Men's" suitings that never attract lint, dust, or dirt.

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ASTON provides static free, smooth production . . . prevents lint attraction from one fabric to another . . . is easy to apply.

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Astonized fabrics cut smoothly . . . will not creep.

WANTED BY NURSES, DOCTORS, OTHERS—FOR SAFETY

Astonized fabrics are static-free . . . will not cause sparking where inflammable or explosive material is present.

WANTED BY CONVERTERS AND BUYERS—FOR GREATER SALES!

Astonized fabrics sell faster . . . open an entirely new sales world for all concerned with fabric and finished garment sales. And talk about promotability . . . "ASTONIZED" is your "Buy Word" of the industry. Aston's acceptance is already attested to by the many well-known companies that have been licensed for its use.

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Many applications exist for Aston in general industry wherever static electricity is a problem: in the manufacture of phonograph records, for Acrilan auto fender covers, for printing press rollers, to mention a few. If you have a particular static problem, tell us about it—chances are our anti-static chemists can help you.

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CHEMICALS
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MODEL 77 CONE



MODEL 78 CONE

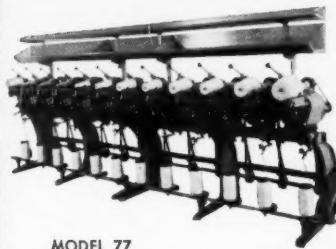


MODEL 35 CONE

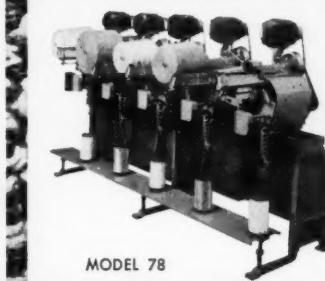
FOSTER MACHINES

For Winding Tufted Textile Yarns

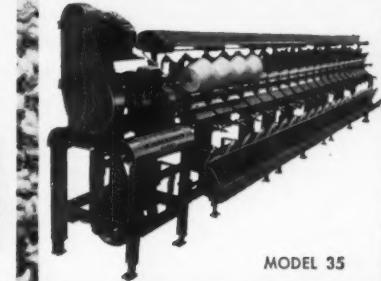
*Let Us Recommend
the One Best Suited to Your Requirements*



MODEL 77



MODEL 78



MODEL 35

Each of these machines is designed for a different situation. Each does a highly creditable job within its scope. Here are the details:—

MODEL 78 — This machine (built in 5 spindle units) produces 8" to 10" traverse, precise wind cones up to 16" in diameter and weighing up to 35 lbs. each. Ball bearing spindles are individually motor driven at speeds up to 800 R.P.M. It has controlled slow start and spindle brake, heavy duty belt gainer with hand wheel adjustment (or positive gear gainer, if desired), positive size stop, electric drop wire and expansion type cone holders, with handle control, for easy donning and doffing. Will wind overend from bobbins or from swifts, reels or unrolling devices.

MODEL 77 — Built in 6 spindle sections, produces 4" to 8" traverse, precise wind cones up to 10" in diameter and weighing up to 14 lbs. each. Ball bearing spindles, individually belt driven by one motor, run at speeds up to 1100 R.P.M. It has a positive, long wearing package brake and positive solid tapered pulley belt gainer. It will wind overend from bobbins, or from swifts, reels or unrolling devices. 90° build-up from face of cone prevents broken back or under-wound packages.

MODEL 35 — Built in units of 10 spindles to 80 spindles. Produces open wind 8" traverse cones up to 11" in diameter and weighing up

to 9 lbs. each. Winding speeds from bobbins is from 180 to 250 Y.P.M. and from skeins 100 to 150 Y.P.M. Standard taper cone holders are 7° 22½' and 3° 51'. Package brakes and disc waxing attachments are extra. Can be equipped to wind from swifts, etc. as well as from bobbins.

Write for Model 78 bulletin A-98A, Model 77 bulletin A-99, or Model 35 bulletin B-46A.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.


Member of
Society Textile Machinery Australia

Southern Office, Johnston Bldg., Charlotte, N. C.
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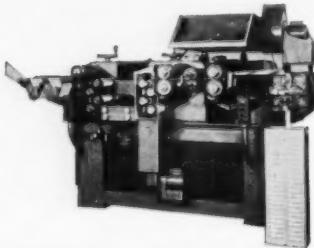
"I never knew you people made all these machines"

He was standing in a production bay at the Turbo plant. He's a division superintendent for one of the large textile manufacturers.

He had seen the Turbo engineering department, the research and development division, production, assembly, and demonstration machines in operation.

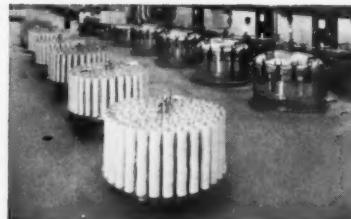
"I am simply amazed at the diversity of the Turbo operation — in textile machines, foundry machines, metalworking, electronics, and general industry," he said. "I never knew you people made all these machines."

You, too, should know the family of Turbo machines, carefully engineered, proved under mill conditions for increased production, better quality, lower costs . . . and backed by a strong service-minded organization.

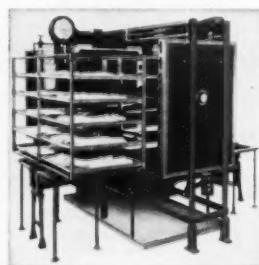


The Turbo Stapler is used by more than 50 leading spinners to convert synthetic tow to the finest staple. Drastically cuts doubling, drafting, and roving operations. Denier, staple length and crimp are under the operator's complete control. Turbo Orlon*, featured by almost every manufacturer of knitted outerwear, starts as tow on a Turbo Stapler.

*DuPont T.M. for its acrylic fiber



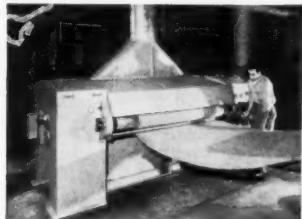
Smith-Drum Package Dyeing Machines, a member of the Turbo family of high-production machines, are first choice for high-temperature, high-pressure dyeing. A sample-package kier permits sampling without interrupting main lot dyeing. A high-pressure, dye-feed kier allows dye bath additions without pressure or temperature changes in the main body of the dye liquor.



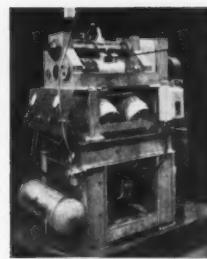
Modified filament sweaters are "set for life" in the Turbo Sweater Setter, a tray-type machine with a production rate of 400 dozen sweaters per 8-hour day. Electrical timers regulate the vacuum and steam cycles to insure uniform setting. Nothing for the operator to do except load the carriers. Turbo heat-setting machines are used throughout the textile industry for the precision setting of fibers, yarns, fabrics, and finished garments.



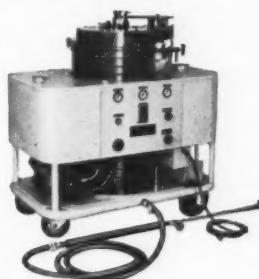
The Turbo Dye Boarder is a complete hosiery dyeing and finishing operation with a production of 140 dozen pairs in 8 hours with one operator. High penetrating action gives desired elasticity so that mills can make substantial savings by using raw pirln instead of pre-shrunk yarn. Saves equipment and labor. No "odds" to redye because shades are duplicated from lot to lot. Other Turbo Machines for hosiery processing include preboarders, finish boarders, a combination of both, and boardless dryers.



The Turbo Electro-Finisher changes the appearance and character of woolens, wool blends, and high pile fabrics. An electrically heated cylinder separates and straightens the fibers, then polishes them to a vibrant luster. Cylinder temperature is accurately controlled so that every inch of fabric width, every foot of fabric length is finished precisely alike. Production speeds — 3 to 30 yards per minute.



Turbo Crimpers are used by major fiber producers to make the crimping of synthetic fibers a uniform, high-production operation. Crimp can be varied by adjusting a single knob.



The Turbo Steam Cleaner is the plant engineer's best friend. It's a heavy duty unit designed for continuous, uninterrupted production. Congealed grease, size, lint, and dirt are loosened and washed away. Choice of oil-fired and electric models. Completely safe. Pays for itself.

* * *

This is just an introduction to the Turbo family of engineered machines. Turbo serves many industries not even mentioned here, including foundries, metalworking, and electronics.

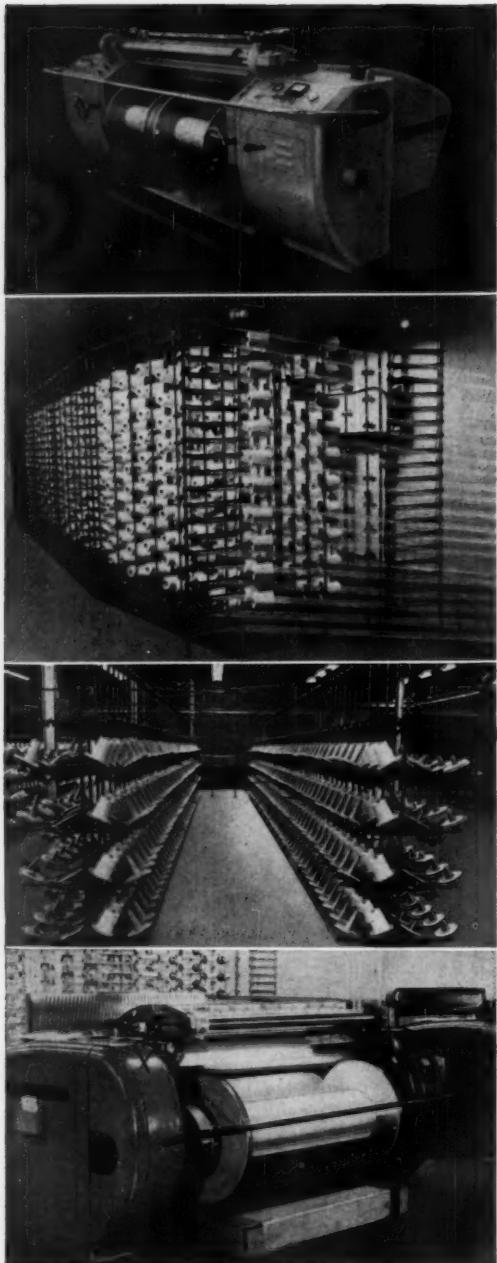
When you buy a Turbo Machine you get *results*. Operators are quickly and easily trained. Machines are automated wherever possible. Maintenance is reduced to a minimum. Talk to a Turbo engineer about your requirements.

TURBO

... a family of engineered machines



TURBO MACHINE COMPANY, LANSDALE, PA.



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THE UNBEATABLE COMBINATION

... used by more yarn
producers than any other

Leading mills everywhere rely on this equipment because
of its speed, high quality production, versatility, convenience,
and economy.

Cocker Tricot Warper Model MB 55-32 (Top Photo)

Handles 2-21", 1-42", 1-55" Beams, or 1-50" or 2-25"
Raschel beam with simple changeover from one set to another.
Individual controls, in full view and easy reach of operator.
Has all modern features and safety devices. Normal sustained
speeds up to 600 YPM.

**Cocker Horizontal Type Magazine Cone Creels
(Second Photo)**

Standard creel is built to take four pound packages but can
be built to take larger packages. Takes any type package.
Cone holders are arranged to swing around inside the "V"
for re-creeling without interfering with the operation
of the machine. Equipped with electronic eyeboard stop
motion. A wide range of tensions is available.

**Cocker Vertical Type Magazine Cone Creel
(Third Photo)**

Available in true vertical or magazine . . . equipped for any
type package. Tensions are new improved type with adjustable
posts for varying tensions in the yarn. Tensions can be
run on light yarns without washers, or washers can be used
on one or both posts when yarn requires it.
Electronic stop motion available.

**Cocker High Speed Spindle Driven Warper (SD-49)
(Bottom Photo)**

Will handle any type yarn. Produces unexcelled synthetic
warps from finest deniers to heaviest tire cord yarns. Takes
section beams with flanges up to 40" dia. Produces warps
of any desired density at speeds up to 1000 YPM.

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COMPLETE WARP PREPARATORY EQUIPMENT

APEX *luxurious* Softeners

... available for every fibre and construction.

VELVAPEX 214-250

For rayon-acetate and synthetic blends. Outstanding compatibility, versatility and stability in a variety of finishing mixes. Does not affect light fastness. Used with resins, silicones and dyesetters of all types.

VELVAPEX 8121

A liquid softener for use in all phases of tricot dyeing and finishing. Highly substantive to nylon and can be applied on whites treated with many optical bleaches. Eliminates scumming and finishing difficulties.

APEXOMIDE = 160

A white, nonionic softener for a high hand on cotton knit goods. Excellent resistance to high heat. Compatible with salts, weighters and fluorescent bleaches.

VELWAX = 6

Similar properties to Velvapex 214-250 but with additional built in resistance to needle cutting.

SOFTENER = 95

A white cationic paste softener imparting a smooth silky hand. Does not retain chlorine like most cationics.

ETHAPEX = 47

A white liquid polyethylene softener especially recommended for cottons. Imparts a soft, cashmere hand. Compatibility of a nonionic yet exhausts on to the fibre. Excellent for use with all types of resins. In package dyeing does not filter out and gives uniform, even results throughout the package. Eliminates needle cutting on knit goods. Does not cream, separate or curd on standing.

APEX CHEMICAL CO., Inc.

Manufacturers of Chemicals Since 1900

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For the manufacture of Rayon and Acetate Textile Yarns,
High Tenacity Tire Cords, Staple Fibres, Transparent Films,
Plastics and other cellulose derivatives.

Quality — Uniformity — Reliability

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FRANKLIN DYE PACKAGES are wound on compressible spiral springs, covered by knitted sleeves. These springs permit soft packages to be compressed more and hard packages to be compressed less, in the dyeing machines, into solid columns of uniform density. Uniform penetration of the dye liquor and consistently uniform shades result.

The spring's the thing which produces "Franklin Dyed" quality — that plus half a century of experience, the correct size of machine for the poundage of yarn, laboratory control and modern softening and drying methods.

Whatever spun yarn you want dyed — nature's product or man made — Franklin Process Service is conveniently and efficiently yours. Get in touch with our nearest plant or office.

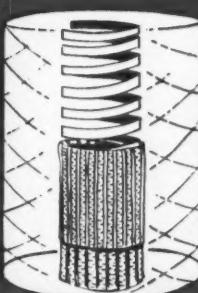
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X-ray view of Franklin Package,
the "secret" of uniform shades.
Don't say "package dyed". Say
"Franklin-Dyed".

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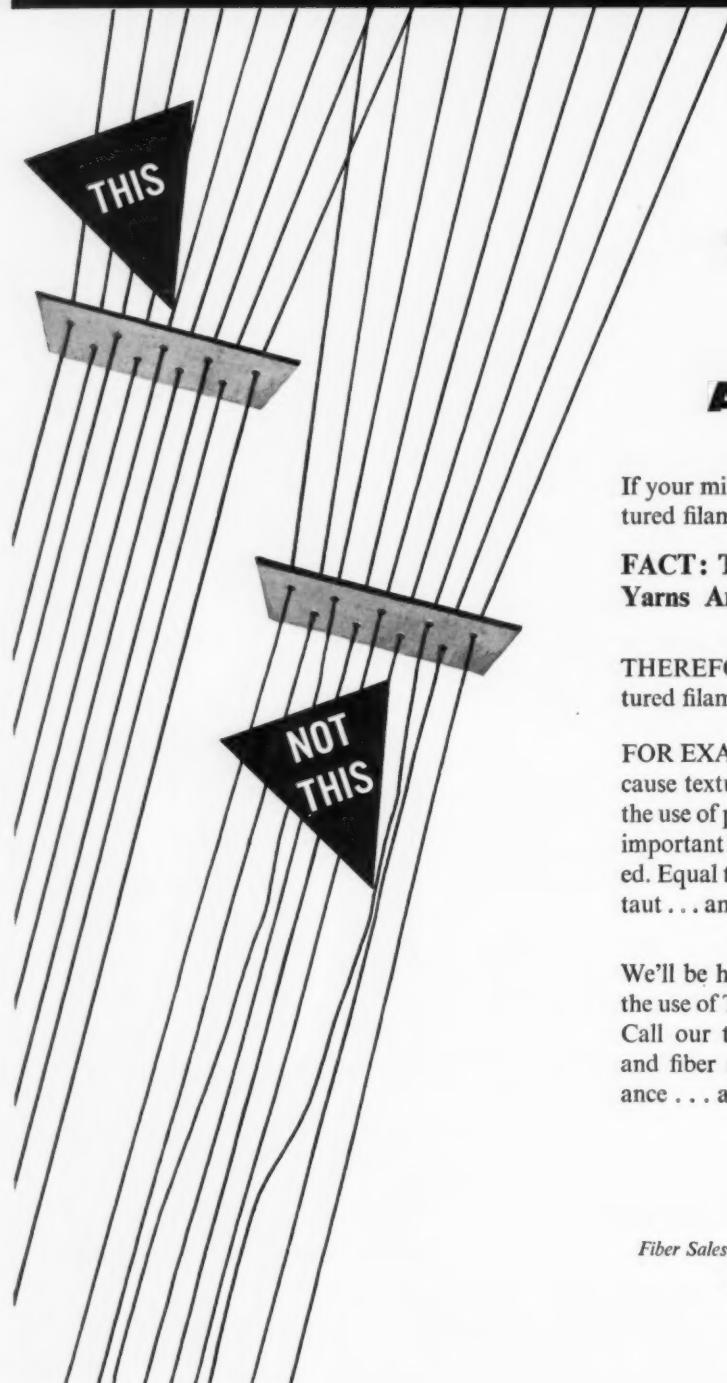
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caprolan[®]
THE NYLON FIBER BY ALLIED CHEMICAL

TEXTURED YARN SEMINAR



#13 of a series



TENSIONS NEED ATTENTION!

If your mill is moving ahead with the trend to textured filament nylon, you know this simple truth:

FACT: Textured Filament Yarns and Spun Yarns Are Not The Same.

THEREFORE, different methods of handling textured filament yarns are necessary for best results.

FOR EXAMPLE, take the matter of tensions: Because textured filament yarns are "precise" yarns, the use of post tensioning devices at the creel is very important if streaks in finished fabric are to be avoided. Equal tensions must be obtained, keeping yarns taut . . . and every end should be checked carefully.

We'll be happy to help you off to a good start in the use of Textured Caprolan in your product lines. Call our technical service, end-use development, and fiber application laboratory staffs for assistance . . . any time.


Fiber Sales and Service National Aniline Division
261 Madison Avenue, New York 16, N.Y.

October '59

MODERN TEXTILES

Magazine

Publisher's Viewpoint

The Dyeing Industry: Textile's Willing Helper

The 1959 national convention October 7-9 in Washington of the American Association of Textile Chemists and Colorists should serve to remind all of us in textiles of the vital importance of our dyeing and finishing industry. As it has often been rightly remarked in our industry, fabrics do not reach consumers in the gray. To be useful, virtually all fabrics, except those in some industrial uses, must be colored and subject to chemical finishing to give them the qualities of attractiveness and functional usefulness needed in apparel, home furnishings and other end uses.

For such coloring and finishing, the makers of fabrics turn to the dyeing and finishing industry and to the resourceful companies that manufacture dyestuffs and finishing chemicals.

Progress Has Been Good

And today, more than any time in the past, the textile industry is being helpfully served by the dyeing and finishing industry. Progress in the improvement of dyes and finishes and in efficient means of applying them to fabrics has been going forward with great strides in recent years.

Never before, has the fabric manufacturer, the stylist, converter, and the dyer and finisher had so great a variety of colors and finishes available to help them produce finished fabrics of increasing attractiveness and wearability. And never before has the working dyer and finisher received such willing, such highly skilled and painstaking assistance in applying today's better dyes and finishes than that available currently from the service departments of the manufacturers of dyes and finishing materials.

Dyers Are Grateful

One successful and highly respected commission dyer recently told us that the help he has

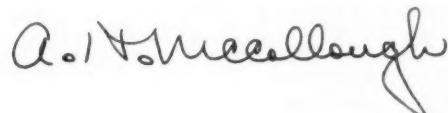
received over the years from dyestuff manufacturers has been of inestimable value to him. He was frank to say that without such help, so freely and skillfully given, he would be hard put to know how to dye on a profitable basis the increasing diversity of new manmade fiber fabrics and blends brought to him by his customers, the converters.

We believe it fitting therefore this month when interest in the textile industry is focused on the dyeing industry to salute the makers of dyes and finishes for the splendid contribution they make to the progress and well-being of the textile industry.

A Splendid Research Program

Similarly deserving of praise and the warm gratitude of the textile industry is that vigorous and progressive professional group, the American Association of Textile Chemists and Colorists. Its achievements on behalf of improved dyeing and finishing of fabrics are too numerous to list here.

Above all, AATCC is particularly deserving of praise because it is a research-minded professional association, with the foresight and vigor to raise large sums to finance its own independent research staff working to improve dyeing standards. Its washfastness tests and other standards painstakingly developed in recent years have been an invaluable contribution to improved dyeing of fabrics, and hence to the better reception of textile products by consumers.





World Wide

BRITAIN'S TEXTILE MODERNIZATION program, which is to cost the Government some \$84 million, is moving along faster than was expected. The program covers the scrapping of 45,000 cotton looms, six million spindles and 400,000 doubling spindles. Well before the Sept. 30 deadline, the loom and spindle goals had been reached. The doubling target lagged, however.

JAPANESE COTTON WORKERS, after a one week strike, won \$4.58 per week wage rise plus bonus. The Japan Cotton Spinners Association later said the overall increase in costs would be one per cent, as wages amount to some 10% of all costs. The group did not expect the pay hike to affect export prices very much.

GERMANY'S YEAR-OLD SLUMP in textiles gave definite signs of ending by early summer. The industry now seems headed for the 1957 peaks. Synthetic fiber output is running some 20% ahead of 1958, with gains noted even in sluggish rayons. The West German Cotton Spinners Association expected that staple imports from the U. S. would return nearer to the 1957 record levels.

SHRINKFREE SILK FABRICS are said to be available under a method discovered by the Kyoto Institute of Textiles in Japan. The silk yarns could thus be blended with nylon. The new process has not yet reached commercial production. It could give another boost to the revivified silk industry.

A BRITISH COMPANY REPORTS it has made vast strides in texturing polyester and polyamide filament yarns. Ernest Scragg & Sons' development reportedly would physically alter the yarn, permitting a round, unusually soft product. It would also be Britain's first textured continuous filament yarn process to be licensed worldwide.

EAST GERMANY TO GLUE SUITS next year, a news report from Berlin has revealed. The new process was developed in Russia and permits the elimination of a great deal of sewing. Glued will be lapels, shoulder pads and linings. When seaming techniques are further improved, all thread will be eliminated.

INDIAN TEXTILE UPTURN is expected even though more than 15% of the country's mills are partly or completely idle. The optimistic prediction was made by L. B. Shastri in an address to

Parliament. He noted that mill stocks are low, and domestic and export sales are on the way up. He said the idle units had not brought about an overall reduction in production. Some 2.7 billion yards of cloth were produced in the first half of 1959, against 2.45 billion in the same 1958 period. Comparable cloth export earnings were \$556.5 and \$518.7 million, respectively.

EGYPT IS PUSHING INDIAN cotton market. The United Arab Republic, noting the improvement in Indian imports of cotton staple from East Africa and the Sudan, is opening a cotton center in Bombay to promote the sale of Egyptian grades. In the 10 months ending last June 30, India imported 400,000 bales (only 51,000 from the U. S.), against 377,000 the previous year (120,000 from the U.S.).

ITALIAN MEN'S WEAR EXPORTS are supplanting British goods to a growing extent, M. K. Reid, secretary of the British Wholesale Clothing Manufacturers Federation, declared. The U.K. is launching a new export drive to reverse this trend, he said.

JAPAN PLACES CEILING on exports of spun rayon goods destined for Canada. For two months exports were forbidden while the new program was worked out. Affected are blouses and sport shirts, coats and slacks, knit underwear and outerwear. Japanese mill men feel that U. S. textile interests will not urge similar ceilings on the grounds that controls for the U. S. are already adequate.

A NIGERIAN TEXTILE MILL has embarked on a 400,000 sterling (\$1.12 million) building program which will raise output by some 50%. The Kaduna Textiles mill will turn out bleached shirtings in addition to common gray cloths. A pilot coir fiber plant will be set up at Badagry to make rope, mats and cushion filling.

U.K. CLOTHING WORKERS began getting pay raises on Sept. 1. The Wholesale Clothing Manufacturers Federation and the National Union of Tailors and Garment Workers agreed on wage rises of \$1.03 per week for men and 77¢ for women; the latter make up 80% of total workers. Some 200,000 workers will get the raises which could spread to 250,000 more in the undergarment and dress fields.

For the boss of Colonial Piece Dye Works a career in dyeing has meant four decades of hard work, an outstanding reputation in the trade, a lot of friends, and a comfortable living for himself and his family.

the

strenuous

good life

of

Dean Lewis

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

OUR COUNTRY today still produces men whose abilities and personalities are made of simple and healthy ingredients like the home-baked farm bread of a century ago. And like the home-baked loaf they are plain and unpretentious but filled with nourishing strength. Their virtues are so apparent and so direct that they immediately inspire respect. Their lives, spent in hard work and kindly, modest family life during their leisure, are definitions in action of the words honesty and industry. Such a man is Dean Lewis, president and proprietor of Colonial Piece Dye Works in North Bergen, N. J., a commission dye house widely respected in the New York fabric market for the fine quality of its work, and the utter reliability of its management.



Dean Lewis

At the age of 59, vigorous, plain-talking Dean Lewis has behind him 42 years in the dyeing business—a lifetime of activity that gives him a knowledge of the trade few men can equal, and a reputation for skill and integrity in dyeing that is second to none. Dean Lewis was born into the textile industry. His place of birth, quite appropriately, was Paterson, N. J., then and for many years after, the town that proudly called itself the "silk city" of the United States; or in still more grandiloquent moments, the "Lyon of America."

At the time Lewis appeared in this world, his father was working as a silk weaver in a Paterson mill. Lewis's mother, before her marriage, had also worked as a silk warper and weaver, and her parents before her had been silk workers in Coventry, England.

With this background, and living in Paterson, it was virtually inevitable that Lewis, when he graduated from high school in 1918 should find work somehow connected with silk manufacture. His first job was with Frank J. Beltramo, a dyer and finisher of silk mixtures.

Young Lewis spent two years in the shop working in succession at all the tasks and machines connected with silk dyeing. Then to cap this strenuous apprenticeship, Beltramo started sending him across the river to the vibrant New York textile market to solicit orders among the silk converters then enjoying the tremendous demand for silk fabrics that marked the early 20's.

Lewis, then as now, was a hard worker, a self-starter with a tremendous zeal for his employer's interests. His drive and verve attracted the attention of management at the then well-known silk dyeing house of Royal-Hasco, and he was offered a job as a foreman in charge of gray goods preparation at \$100

a week, an enticing advance over his salary of \$35 with Beltramo.

At Royal-Hasco, Lewis again was given an enviable opportunity to increase his skills in the complex arts of silk dyeing; and, to make his experience even broader and more educational, he was often sent out as a "trouble shooter" to see customers to work out with them their complaints or find for them acceptable solutions to special dyeing problems they might have.

While he worked at dyeing during the day, Lewis made it his business to study dying theory at night. For several years he studied at Columbia University, taking courses both in dyeing and chemistry. Later he attended evening classes in Paterson's vocational high school, studying both the theory and practice of dyeing under, as he recalls it now, "the tutelage of practical men." As befitted a great textile center, the Paterson vocational school had many good men available to teach textiles and dyeing, Lewis says. He remembers with affection and gratitude many of the teachers, most of them now dead, who passed along to him the secrets of good dyeing and dyehouse management that they had gathered in long lifetimes of practical effort in the north Jersey dyeing trade.

Superintendent at 25

By the time he was 25, Lewis had moved along to a post of superintendent of a newly established dyeing business, Seiter, Hellman & Young, an outfit then occupying the plant in Rutherford, N. J., now the location of Advance Piece Dye Works. At Seiter's, Lewis was in charge of 100 workers and he drew the handsome salary in those days for a man so young of \$150 a week.

In 1927, Lewis received an attractive offer from a well-known and highly respected silk dyeing house in North Bergen. This was the Atlas Finishing Co. which is well-remembered by old-timers in the New York dyeing and converting trade. Owned by Celestino Piva, a man with many connections with silk weavers who had brought their fine skills and jealously guarded standards of quality from Italy's silk weaving centers, Atlas was a prosperous outfit, enjoying the cream of the silk dyeing business originating among mills and converters headquartered in New York. Piva, an elderly bachelor, lived in a sumptuous apartment in Washington Square where he entertained celebrities such as Enrico Caruso, and participated in the growing activities of New York's Italian-American community. He was thus glad to turn over the supervision of the plant with its 250 workers and exacting customer requirements to young Lewis, paying him the really impressive salary of \$200 a week along with frequent bonuses.

Before many years had passed the shrivelling winds of the great depression dried up Atlas's business. Piva, running out of money, closed down the plant just as many other commission dyeing plants and silk mills in the North Jersey area were also closed in those bleak years.

Partner in Dye Firm

Lewis, meanwhile had married and had two children to support. For the first time in his career, he had to go out and look for a job. He found one as a finisher at \$100 a week with an outfit called the Rayon Dyeing Corp. When the firm was reorganized the following year, after the death of Joseph Pelli-

grini, one of the partners, Lewis with an investment of \$2,000 became one of the four equal partners.

The new firm named Colonial Piece Dye Works, was scarcely in business when the commission dyeing plants in Paterson and New York City were shut down tight for several months by a strike. Colonial in North Bergen had a contract with a different union local and was able to stay open. The fledgling dye shop enjoyed a tremendous rush of business from converters desperately anxious to get their cloth dyed to fill customers' orders.

The converters, Lewis recalls, came in light trucks, in station wagons, in private cars to bring their cloth for dyeing. They literally snatched the fabrics from the dryers and loaded up their cars to rush them back to New York. Some of the passenger cars were so overloaded, Lewis had to use his friendly relations with North Bergen's cops to permit them to proceed to the ferries and the Holland Tunnel.

Another strike the following year brought a similar rush of business. While Lewis and his partners sympathized with the plight of their dyer friends in Manhattan and Paterson, they could not help saying to each other: "It's an ill wind that blows nobody good." In time Lewis's partners sold out their interests to him; in 1953, when the last of the three withdrew, Lewis became sole owner.

Colonial started out with a modest plant of 10,000 square feet, six jigs and six dye boxes, all served by one boiler. The years since then have seen steady although unspectacular growth for the firm, a decent living for Dean Lewis and his family along with days crowded with exacting, stimulating, and all things considered, Lewis believes, highly rewarding work.

Heads Dyers' Group

These years of work have brought to Lewis the deserved reward of a high reputation for integrity and reliability throughout the textile and dyeing industries. An indication of the respect and admiration that Lewis has earned throughout the textile industry and the dyeing trade is the fact that currently he is serving his eleventh year as president of the Silk and Rayon Printers and Dyers Association.

He has held the position all these years because he regards it as a duty toward his fellows in the industry. "We need our trade organization," he says, "and as long as my fellow members ask me to be president, I am willing to serve." He wishes, however, that someone else in the industry would take over for him as president. It is his personal conviction that the job of president should be passed around to other leaders in the industry; but the members won't hear of anyone else being elected as long as Lewis is available every two years to be drafted again into office.

Colonial Piece Dye Works today has more than double the floor space it had when it started. Its stainless steel equipment is modern and as efficient and well-managed as any in the industry. The range of fabrics dyed on this equipment is broad. Virtually every type of manmade fiber fabric and blend is dyed and finished in the plant, and among its 80-odd active accounts are some of the most respected names in the converting business.

A tour of the plant with Dean Lewis reveals the versatility of Colonial's commission dyeing and finishing work. On a single day not long ago, Lewis was able to point out to a visitor big rolls of burlap

(Continued on Page 68)



Veteran American knitter Max Thal explains functioning of newly purchased Wildman pile knitter to workers in Moscow mill.

Here is what Max Thal saw on a tour of a Russian knitting plant

By the Editors

THE MEN AND WOMEN in the Soviet Union's knitwear industry give every impression of being hard-working, earnest and intelligent. But their efforts to manufacture knit goods appear to be strangulated by the rigid and inefficient bureaucracy that supervises their industry.

These are the dominant impressions carried away by Max Thal, president of Alamac Knitting Mills, who last August was given the rare privilege of inspecting one of the largest and best-equipped knitting plants in the Soviet Union. Thal was in Moscow as a member of the executive advisory council for the fashion industries presentation at the American National Exhibition.

The knitting plant Thal spent a whole day inspecting was the Moscow Regional Knitting Mills located about 30 miles outside Moscow. One of the largest knitting plants in Russia, the mill has 6,000 employees who turn out a wide variety of knitted goods as well as finished garments.

In an interview with Modern Textiles Magazine's editor, Thal reported that the plant, housed in a group of old buildings, was equipped with machines for the production of warp and circular knit fabrics and full-fashioned hosiery. Cloths produced included

nylon and acetate tricots, cotton and cotton-wool fleeces, nylon suèdes and nylon women's stockings.

With few exceptions, the machinery he saw was antiquated — he judged it to be from 30 to 40 years old. Among the few new machines were 20 brand new Wildman pile knitters for producing fur-like fabrics. Housekeeping at the plant was excellent, he noted. Machinery and floors were clean and well kept.

Thal is well-qualified to evaluate the efficiency of the Russian plant he saw. A man who has been in the knitting business for 37 years, he worked as a knitter, machine fixer, dyer, and fabric salesman before founding his own company, Alamac, in 1943. In the years since, Alamac has grown to be an acknowledged leader in the production of high-quality, high fashion knits for the women's dress trade. Alamac's big plant at Indian Orchard, Mass., is considered one of the best-equipped and most efficient in the industry.

Thal's invitation to visit the Moscow plant came to him as a result of his hospitality toward a group of Russian textile engineers who visited the United States earlier this year. He took them through

(Continued on Page 85)

SPRAYED FIBERS

An advance report on a new technique for producing textile fibers in nonwoven structures with good drape.

By Derek E. Till,
ARTHUR D. LITTLE, INC.

HERE is a great deal of art, some of it almost 100 years old, on the use of air to form fibers from molten inorganic materials such as mineral slag and glasses. Very little has been published, however, on the use of this technique for forming fibers from organic materials. While this article is not intended to be an historic review of developments in the blown or sprayed fiber field, it is worthwhile to touch on some of the more interesting work which has been reported before considering some recent advances in the art. The methods differ somewhat in detail, but they all involve the introduction of molten or dissolved polymers into high velocity streams of air or gas, which rapidly convert the liquid into fibers.

Several years ago, Wente and co-workers at the Naval Research Laboratory¹ produced extremely fine fibers—of the order of 0.3 microns and upwards—by extruding a melt of nylon through orifices into a very high velocity heated air stream. Coarser fibers were made from DuPont Dacron polyester, polyethylene and other polymers. Small quantities of fiber are also being made by a similar technique in Europe, for certain highly specialized filter applications from hot melts of polymers, principally polyethylene. In general, these fibers are characterized by their fine diameter, short length and a tendency to be curly or irregular.

The spraying of fibers from solutions is probably as old as the paint spraying industry, where the phenomenon is far from being regarded as an asset. Sprayed fibers have been used as a supporting medium for continuous non-porous plastic sheets, subsequently applied by conventional spray techniques, for the protection of Naval and Air Force equipment in mothballs and for the construction of temporary structures of unusual shapes, such as parade floats.

Perhaps the first deliberate attempt to develop useful commercial processes for making sprayed fibers was that of Carleton Francis, an independent inventor. In 1939, Francis visualized that a spray gun which could produce fibers might be used for a wide variety of purposes, including the combining of adhesive or potentially adhesive sprayed fibers with other textile fibers to form nonwoven fabrics, the production of shaped articles, etc. The rights to Francis' work were subsequently acquired by the American Viscose Corp., which retained Arthur D. Little, Inc., in 1951 to investigate the sprayed fiber field, using the Francis patents² as a point of departure. Since that time we have, in conjunction with American Viscose, studied nozzle design and collecting techniques and investigated the fiber-forming characteristics of a large number of polymers.

Figure 1 shows the layout of a unit which we have

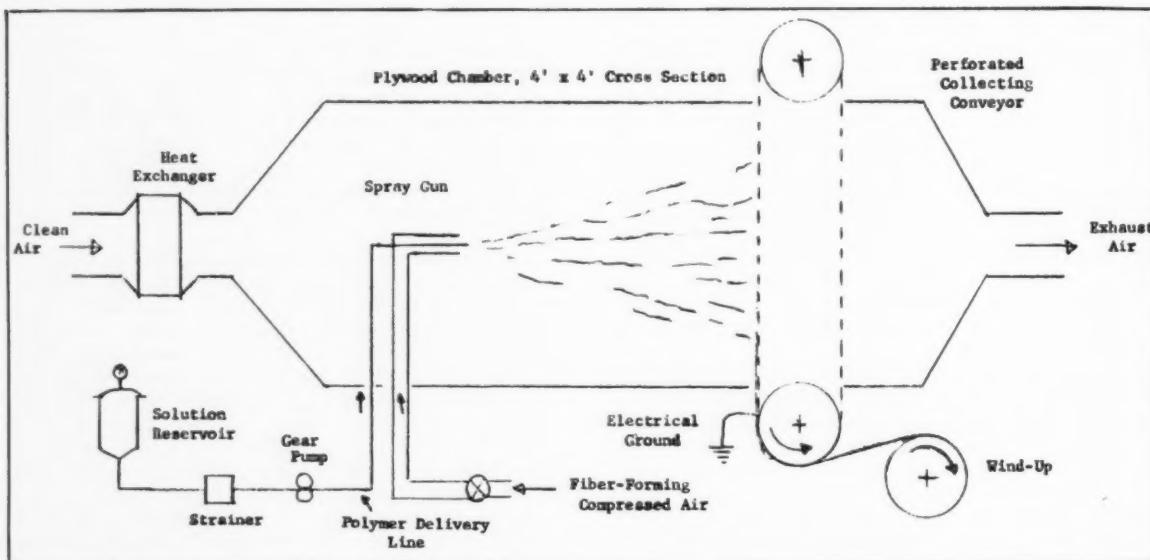
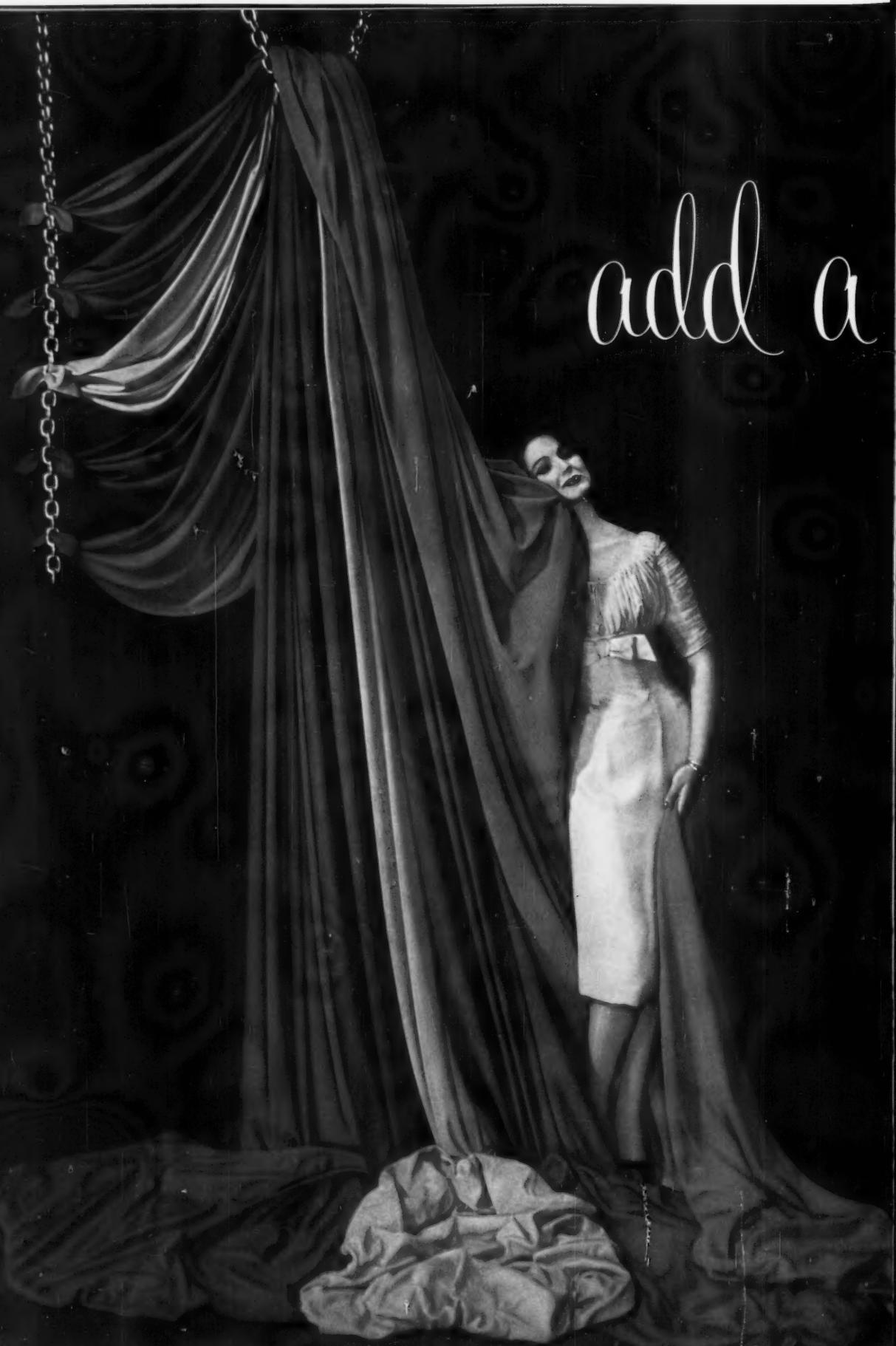


Figure 1—Diagram of experimental unit for producing fibers by spraying.

(Continued on Page 41)



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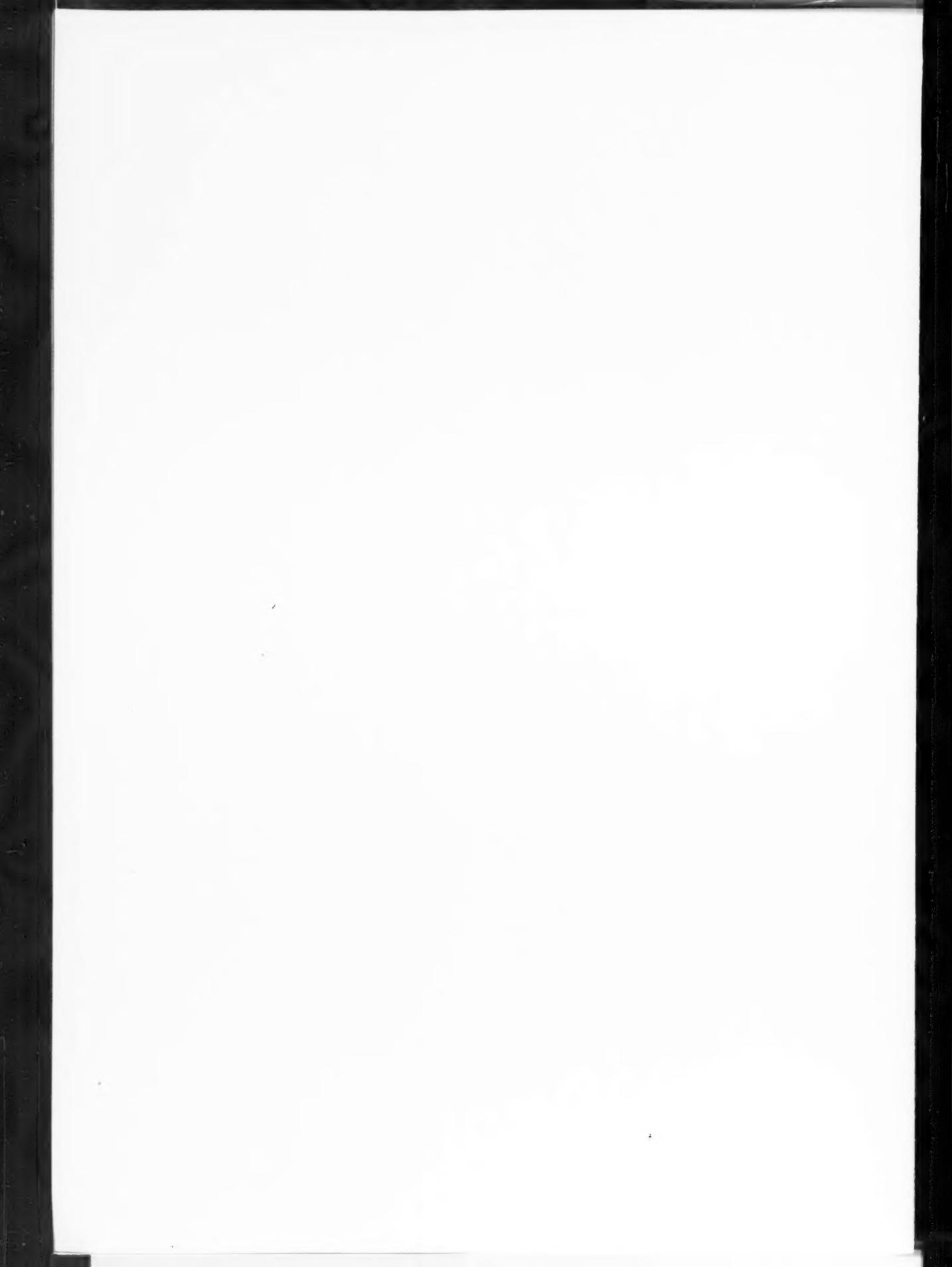
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Sprayed Fibers

(Continued from Page 36)

found useful for studying the production of fibers by spraying. The spray gun itself is basically very simple, consisting of a polymer delivery line terminating in a jet which is mounted concentrically within an air delivery tube. The rest of the experimental setup consists of a pressurized polymer reservoir, a metering pump with variable speed drive, a supplementary air stream to help float the fibers to the collector and to aid in solvent removal, and a perforated collecting surface.

In a more recent development, we have found that the imposition of a strong electrostatic field on the fibers as they are formed makes a profound difference in the characteristics of the products.³ This important modification will be dealt with in more detail later.

Using our simple spray unit, we successfully produced fibers from many classes of polymers and elastomers. Examples are: vinyls, vinyl copolymers, poly-acrylic esters, polyacrylonitrile, polystyrene, cellulose derivatives (but not viscose), natural rubber, SBR-type elastomers, Neoprene, and polyisobutylene.

The ease with which fibers were formed differed enormously from polymer to polymer. Polystyrene yielded fibers with ease under a wide variety of spray conditions and in a number of solvent systems. Other polymers, such as cellulose acetate, were induced to form fibers only with difficulty.

Effect of Velocity

In general, an increase in the velocity of the fiber forming air causes the fiber to become finer. At the same time, however, the fiber tends to become shorter until the product becomes almost entirely composed of particulate material. The rate at which the polymer solution is pumped, naturally influences the manner in which the characteristics of the fiber are formed. In the case of natural rubber for instance, as the pump speed is increased so the diameter of the fiber increases. On the other hand, when making microfibers (1-2 microns or less) from acrylonitrile and other polymers, an increase in the polymer delivery rate serves only to increase the amount of particulate matter. The circular deposition pattern from a single nozzle may be from one to four feet in diameter, depending on the velocity of the fiber-forming air.

It is interesting to note that rubber fibers appear to be drawn down in the form of a very rapidly oscillating single filament, whereas microfibers appear to be formed by quite a different mechanism in which the stream of plastic is disrupted simultaneously into many fine fibers which proceed independently to the collector.

The two most interesting products which we investigated from the standpoint of potential commercial utility were: (a) porous mats of relatively coarse fibers of rubber and other elastomers; and (b) microfiber products composed of very fine fibers of vinyls and acrylonitrile.

Fibers made from elastomers generally ranged in diameter from .001" to .010". The self-bonding characteristics of uncured elastomers enabled us to collect porous, randomly oriented, self supporting sheets composed of long fibers (several feet) bonded at their points of contact. Figure 2 shows the surface of a typical natural rubber mat; Figure 3 is a cross sectional view, indicating that the fibers are frequently hollow. When cured, the rubber mats show excellent

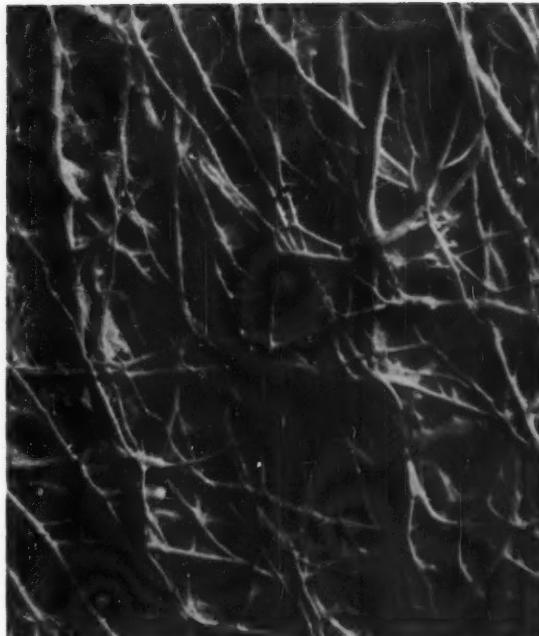


Figure 2—Surface of typical natural rubber mat produced by spraying.

resilience, tear strength, elasticity and compression set.

Microfiber material is also characterized by very long fibers. In practice, we find it very difficult to follow an individual microfiber for any distance in the field of view of the microscope. It seems very likely, however, that these fibers may be as long as a foot or more. Figure 4 shows a portion of a microfiber web. It will be noted that the fibers are remarkably smooth and regular considering the high degree of turbulence in the air stream in which they are formed.

The distribution in microfiber sheets appears to be completely random, particularly when an electrostatic charge is applied to the spray gun. In fact the electrostatic adjunct has proven to be of vital impor-



Figure 3—Cross-sectional view of sprayed rubber mat showing many hollow fibers.

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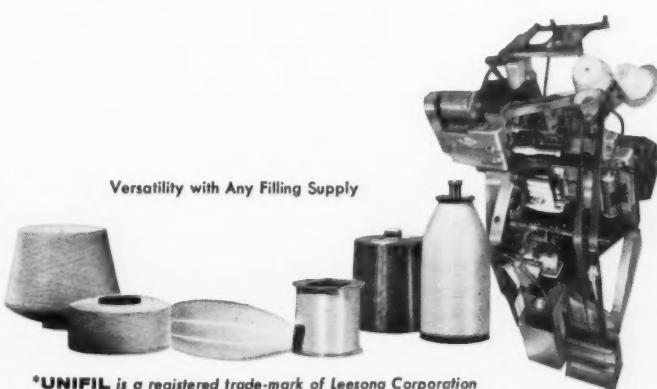
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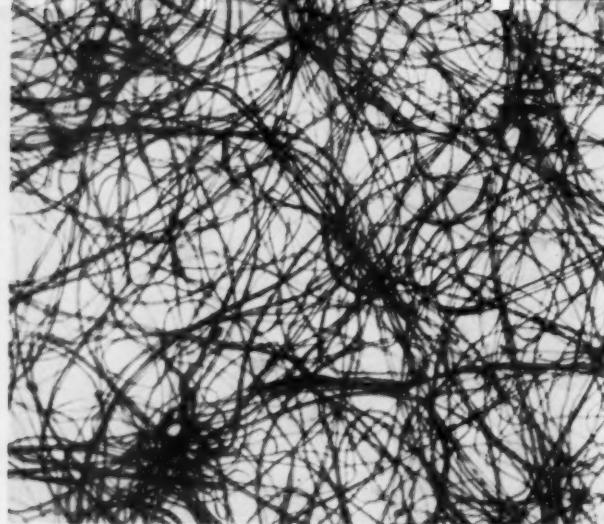


Figure 4—Portion of a microfiber web produced by spraying method.

tance in the preparation and collection of useful microfiber webs. In the absence of an electrostatic field, we find that fibers entwine with one another to form loosely twisted "yarns" composed of many fibers. The uniformity of the product is affected and full use cannot be made of the excellent filtration characteristics possessed by microfibers. The imposition of an electrostatic field, however, either "explodes" these ropes or inhibits their formation, so that the fibers are collected in a substantially individual manner. Fiber separation by this means also aids solvent removal during the passage from the gun to the collector.

Extremely Light Webs

The physical characteristics of microfiber mats are very interesting indeed. For instance, using the technique described, we have been able to spray mats composed of a vinyl chloride/acrylonitrile copolymer which were easily removed from the collector even though they weighed only 5 grams per square yard. That such webs are self supporting is, we think, something entirely unique in the organic fiber field. We are not sure why the fibers hold together to form such a coherent mat, although it seems likely that the length and fineness of the fibers, plus their random deposition, provides an unusually good opportunity for many fiber-to-fiber frictional contacts. We believe that there is very little direct solvent bonding, since a very high percentage of the solvent evaporates before the fibers reach the collector. In addition, the extremely high degree of drape of many microfiber products would seem to substantiate the absence of cementing. We also suspect that the high electrostatic charge which these fibers possess aids in preserving the coherence of the mats.

The upper limit of bat formation is not known, but samples having an apparent thickness of $\frac{1}{2}$ " or more may be readily prepared. Shaped objects have been prepared on suitably grounded or charged forms, and blended products in which microfibers bond other materials together, can be made. A number of spray guns can be mounted in the chamber so that their spray patterns overlap to give a uniform sheet.

Uses for Sprayed Fiber Products

To what uses can sprayed fiber products be put in their present state of development? The fibrous rubber materials have strength advantages over cellular products in uses where elasticity and porosity combined with tear strength are important features. The

Connecticut Hard Rubber Co., a licensee of American Viscose, is currently offering a silicone rubber product having improved compression set resistance and greater porosity than cellular silicone products.¹ It is expected that laundry and dry-cleaning press padding will be a large market for this product. Other uses where the environmental resistance of fibrous silicone rubber is essential will be in special types of thermal insulation, vibration absorption material, sterilizable cushioning, etc.

Perhaps the most obvious use of microfiber materials is connected with their excellent filtration characteristics. Because the unusual randomness of the fine fiber system is coupled with a degree of porosity very difficult to obtain in products prepared by wet methods, filtration efficiencies and permissible loadings are very high in comparison to the pressure drop. Values obtained with microfiber webs are comparable with those found for the AEC "absolute" filter papers; in addition, the microfiber structures have greater flexibility, possess good wet strength and are ash-free. The high electrostatic charge on the fibers is also believed to contribute to the filtration efficiency. The Mine Safety Appliances Co. has licensed the American Viscose process in the field of air filtration, and it is expected that new products will be test-marketed in the near future.

Some Uses

The Air Force has recently released details of unusually effective air filtration media prepared from sprayed polystyrene fibers supported on a woven scrim.²

The unique characteristics of microfiber materials might also find application in the field of thermal insulation, either as batts, as bulk fiber, or as a binder fiber in a composite structure incorporating other insulating materials, either granular or fibrous.

Those of us who have been associated with the sprayed fiber field often dream of the possibility of bypassing all of the conventional spinning, weaving and fabrication processes so that the production of a true one-piece garment can be accomplished. We recognize, however, that the problems of carrying such a concept through to a commercial solution are indeed formidable. Although we can make microfiber nonwoven fabrics with unequalled drape, the strength and abrasion resistance of the materials is very far from being satisfactory for apparel uses. There are also economic considerations which at the moment might well deter an enterprising manufacturer from producing, say, a one-piece disposable T-shirt, (although we have made a crude garment of this sort). We have also prepared intriguing porous, "all-way stretch" garments, vaguely reminiscent of girdles and swimsuits, by spraying fine rubber fibers onto rotating forms.

It is to be expected that as more use is made of the spray technique, many of the current problems will be solved, so that the one-piece sprayed garment may some day be a reality. For the moment, however, sprayed fiber products must be treated on their own merits and should not be regarded as competitors for conventional textiles.

1. Wente, V. A., *Ind. Eng. Chem.* 48, 1342-6 (1955).
2. Francis, C. S. Jr., U. S. 2,357,392
U. S. 2,483,404, and subsequent patents
3. Till, D. E. and Smallman, C. R., U. S. 2,810,426.
4. Russell, R. A., Paper presented at Div. of Rubber Chemistry, A.C.S., May 1959.
5. *Ind. Eng. Chem.* 50, 12, p.30A, 1958.

Much of the work covered in this paper was sponsored by the American Viscose Corp. to whom the author wishes to express his thanks for permission to publish.

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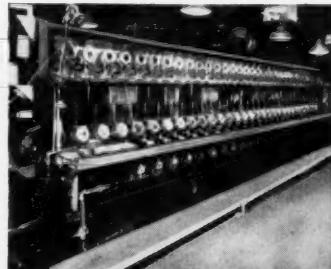
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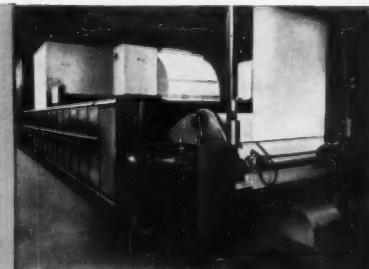
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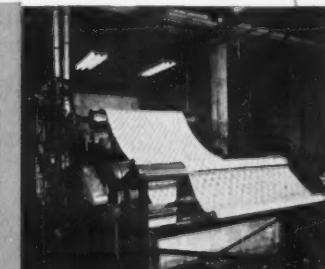
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Measuring printing costs

By Raymond W. Jacoby
DYEING & FINISHING EDITOR

IN BOTH dyeing and printing it is comparatively simple to keep accurate color costs for each lot or color, or pattern or color combination. Although these will vary extensively due to many factors, by careful recording and study it is possible to operate economically with this item of cost.

With the major portion of printed goods, although the color cost frequently is appreciable, the other costs in the printing operations are much greater. Therefore accurate knowledge and control of these costs is of great importance, due to their magnitude. To obtain this very necessary knowledge and control the "Print Machine Hour" is a yard stick of inestimable value.

A Print Machine Hour is one hour of print machine time when it can be operating. For example, if a 15 print machine plant is operating two 40 hour shifts or 80 hours a week, there are 1200 print machine hours per week. This is the total time a machine might operate. No time is deducted for various stoppages such as changing pattern, changing color, getting patches, etc. This is the maximum production factor. No matter what the bleaching capacity is, or what the finishing capacity is, their output cannot be more than what goes through the print machines. Therefore the entire production depends upon print machine output.

The first use of this yard stick is the production per Print Machine Hour. This is calculated on an overall basis. In the example above, if, in the week with 1200 print machine hours, the yardage printed was 2,160,000, dividing this production figure by 1200 shows an output of 1800 yards per Print Machine Hour. For the man who wants close control of his production this figure can be obtained on any basis desired. If a shift is 8 hours, with 15 print machines there are 120 Print Machine Hours per shift, so, it is simple to get the Print Machine Hour production figure for each shift.

Need to Know Costs

To supplement these production figures it is necessary to know costs. Here again, a lump figure is used, although this can be of any size desired; shift, day, week, or month. In obtaining cost figures, practice varies extensively from plant to plant. The most logical procedure is to include all operations required for printing but how extensive the items to be included are is a matter of individual opinion. An example of the operations covered is:

White room: Winding, framing, shearing goods to be printed.

Print Room: All, including jack roller storage and repair.

Ageing or Steaming: All

Soaping: All

Items which are usually included: labor, supplies, power and steam if metered.

Items which may or may not be pro-rated: power and steam if not metered; supervision.

Other expenses which are independent of operation may be put into general overhead account. These include: taxes, insurance, interest, depreciation, selling and administration.

After it is determined how extensive these figures are to be, adhering to this basis will provide good comparisons.

Referring again to the 15 machine two 40 hour shift operation or 1200 Print Machine Hours, if the total print operation cost was \$115,200 for one week, dividing this by 1200 gives a cost of \$96 per Print Machine Hour. This figure can be used to determine the cost of any lot pattern or color combination. Dividing this cost of \$96 per Print Machine Hour by the production of 1800 yards per Print Machine Hour, gives an average cost of 5.33 cents per yard.

A Clear Cost Picture

Unless operation is on a part time basis, the cost per Print Machine Hour will not vary much. It could be figured for the week, or even by the month and give a figure that could be used satisfactorily.

The production per Print Machine Hour can be calculated down to any basis desired, even per lot or per pattern. That is, how many print machine hours were taken up in printing a certain lot or pattern.

These figures of cost per Print Machine Hour and production per Print Machine Hour, will, together, give a very good picture of operations. Color costs are easily obtained and this is generally done on a lot or pattern basis. Other costs, such as gray room, bleaching, finishing, put-up, packing, shipping, and gray and finished goods storage, usually do not vary much under steady operating conditions, so an average total cost of these items over a period will be representative.

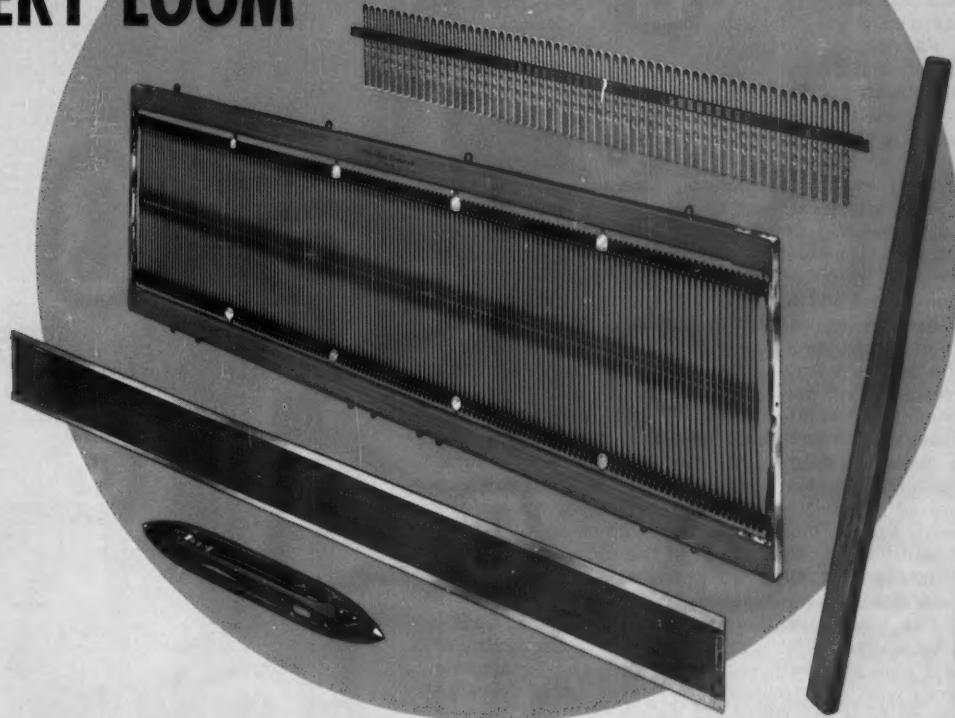
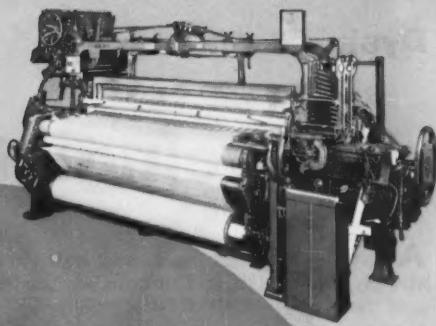
Total operating statements are generally made up each month. This means that they are not available until two or three weeks after the month is closed. The four figures mentioned above can be kept up to date constantly. They will give a fairly accurate picture of total cost. In this way, control will be based upon up-to-the-minute conditions; not those of three to six weeks ago.

The Print Machine Hour is a very valuable yard stick for the executive who wants his print works to operate at maximum efficiency and minimum costs. The man who obtains and studies these figures will have his finger on the pulse of his business at all times. ■

Stehedco

PRODUCTS

Are The Heart of EVERY LOOM



Stehedco products are designed and manufactured to weave better quality fabrics with greater economy.

The drop wires and electrodes supplied by Stehedco meet your most rigid requirements, in any type, size and style.

Whether you use Stehedco Drawtex or conventional type harness, you get the finest quality and the latest developments for improving your production and economy.

The Southern Shuttles Division of Stehedco has earned the world's leadership in the manufacture of every type of shuttle. Many new types have been introduced by Southern Shuttles to give you longer trouble-free performance.

Stehedco picker sticks are designed to give you unequalled service and need fewer replacements, with a complete line to meet every requirement.

Stehedco reeds are recognized as the finest in the world, and whether you use all metal or pitch band, stainless steel or regular, you can be very sure that they are made with the utmost precision and quality to give you the longest trouble-free service.

Ask one of our qualified field engineers to show how you can profit more with Stehedco products.

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C. • Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

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STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

K-5825

Dyeing & Finishing

Dyeing stretch nylon tights

A NUMBER of full fashioned mills are producing stretch nylon tights. The popular shades are black and red, also a bright royal in fair amounts. Light shades, which are not numerous, are being dyed with disperse colors.

Three shades comprise the major share of present business in dyeing the heavy shades on tights. They are: red, royal blue, and black.

For dyeing red tights, Chloramine Red B and 3B are specified if price is paramount. When these reds are aftertreated with tannic acid and tartar emetic, there is only a slight stain on the nylon in the #3 wash test. A somewhat faster-to-washing combination would be Sulfone Red B and RS. Both show good enough exhaustion for the tannic acid and tartar emetic aftertreatment to be performed in the same bath. The only detail to bear in mind with respect to these reds, as well as the blues or blacks, is that the dyebath must be fairly well free of color before the tannic acid and tartar emetic treatment is performed.

For dyeing royal blue tights, Acid Blue NBG is coming into favor. It is far less expensive than any of the above formulas, possesses sufficient fastness to washing, and does not require a Lyogen P pretreatment to eliminate barré. The light fastness leaves a great deal to be desired, in that a ten hour test shows a distinct fading to the dull side. However, the low cost of this formula may make it acceptable to a number of dyers. Xylene Milling Blue GL may also be used, but in most cases the exhaustion is not sufficiently good to aftertreat in the same bath. Brilliant Alizarine Sky Blue BS possesses excellent fastness, exhausts well, but is relatively expensive.

For black, we favor Nylon Black NDJ. This, of course, dyes well without barré (no pretreatment), and exhausts well, thus enabling a one-bath method even with aftertreatment. However, some dyers prefer to base the Black on Xylene Milling Black 2B, usually in combination with Green GSN and one of the milling yellows. Relatively poor exhaustion of this combination, even when sulfuric acid is used, usually necessitates aftertreatment in a fresh bath with tannic acid and tartar emetic. The only advantage of the Black 2B formula is that the wash fastness is noticeably better than that of the Black NDJ.

The following formulas are representative of work being done at a full fashioned mill. Our procedure calls for: 5% Lyogen P; 2% formic acid, as a preliminary treatment at the boil, followed by 2% Lyogen P in the dyebath.

Formulas are based on use of a light scour. However, in addition, on badly soiled tights, very good removal of grease and graphite is obtained by the following method:

3% Rinfors HB 50
5 min. cold
2% Sandopan DTC
4% caustic soda

5 min. cold.
Raise temperature to 200°F.
30 min. at 200°F.

FORMULAS FOR STRETCH NYLON TIGHTS

Black

Scour cold to 190°F. for 15 min. Add cold:
1.0% Sandopan DTC 1.0% acetic acid 56%
0.5% STPP Raise to 140°F.
1.0% caustic soda Drop. 3 hot rinses.

Add:
6.30% Nylon Black NDJ 3.0% tannic acid
0.23% Azo Silk Red 3B Raise to 180°F.
at 130°F. Run 15 min.
Raise to 200°F. in 30 min. Cut off steam.
Run 45 min.
Sample.
Drop.
Rinse until clear.
Finish with:
1.0% Ceranine HC Conc.

Blue

Scour as for black.
Add:
5.0% Lyogen P 1.050% Alizarine Light Blue 2A
3.0% acetic acid 56% 0.080% Xylene Fast Bordeaux P
at 100°F. Raise to 200°F. 0.105% Xylene Fast Grey P
Run 10 min. Raise to 200°F. in 30 min.
Drop. Run 30-45 min.
Rinse. Sample.
Finish with:
Ceranine HC Conc.

Red

Scour as for black.
Add:
3.0% Lyogen P 4.00% acetic acid 56%—in four parts
3.0% acetic acid 56% Run 20 min. Sample.
at 100°F. Raise to 200°F.
Run 10 min.
Drop.
Rinse.

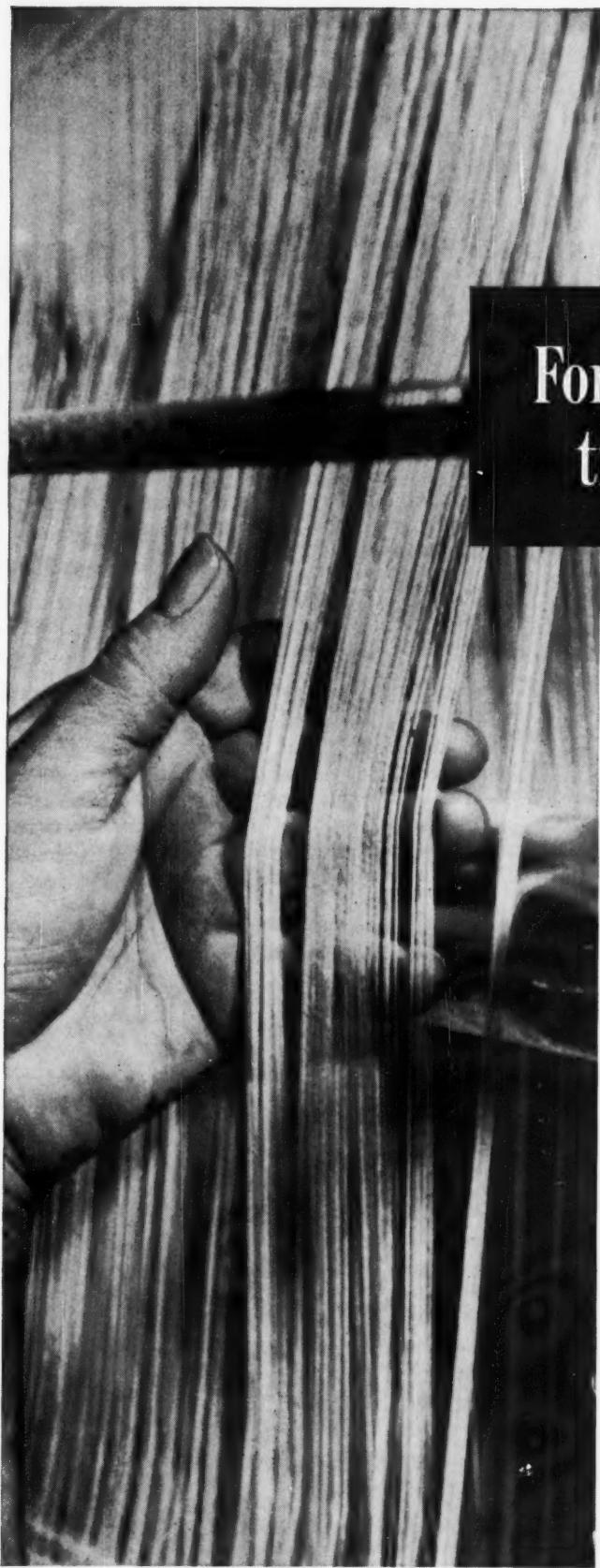
Add:
1.0% acetic acid 56% 3.0% tannic acid
at 120°F. Run 5 min. Raise to 180°F.
Run 15 min.
Cut off steam.

Add:
3.00% Sulfone Red RS 2.0% tartar emetic
0.55% Nylon Red B Run 15 min.
0.06% Xylene Fast Grey P
Raise to 200°F. in 30 min.
Run 10 min.
Finish with:
Ceranine HC Conc.

Textile Output Rising

A continuing rise in textile mill production from the recession lows of last year is reported by the American Cotton Manufacturers Institute. The ACMI said a 22 point increase in the textile and apparel index of production occurred from May, 1958, through May, 1959, with half the gain registered in the first five months of this year.

Exports of both cotton cloth and manmade fiber fabrics are continuing the downward trend of the past two years while imports pursue an upward course. During the first four months of this year, manmade fiber exports ran below the 1958 level of 157 million square yards which was 14 million square yards less than in 1957. Imports of these fabrics are running at an annual rate of almost 8 million pounds, as compared with 4.9 million in 1958 and 3.3 million the year before.



For clearer size, truer colors

... in warp sizing and in finishing, use TEN-O-FILM starches.

In warp sizing, TEN-O-FILM starches cook completely in thirty minutes and remain stable through prolonged heating and circulating. Sizing and desizing of all types and blends of yarns may be done at lower temperatures to reduce "bleeding," and permit use of a great variety of dyes.

In finishing, the clarity of film produced by TEN-O-FILM is a real advantage. There is no masking of colors in dyeing man-made fibers.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® and TEN-O-FILM® starches • GLOBE® and EXCELLO® Dextrines.



CORN PRODUCTS SALES COMPANY
17 BATTERY PLACE, NEW YORK 4, N.Y.

NOW

a whole new with cotton

It is now possible for you to produce without modification of your present equipment wash 'n' wear fabrics of superior properties.

Why? Because there is a new fiber of super strength rayon available. It is AVRON rayon.

The new fiber excels cotton for single fiber tensile strength in the conditioned state, approximates it for the same property when wet. AVRON is not degraded to the same extent as cotton by resin finishing and, added to cotton, it imparts a soft hand unattainable with cotton alone.

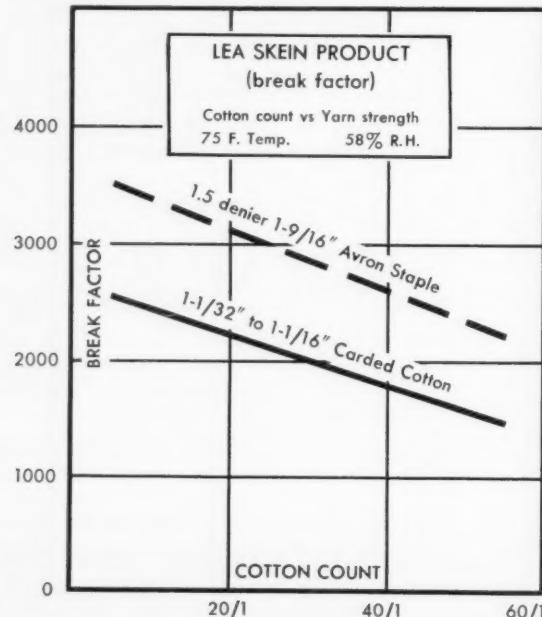
NO CHANGE IN TECHNIQUES NECESSARY. Avron rayon may be worked through the cotton system without any modification of equipment. Because of superior tensile strength, spinning

and weaving efficiency is higher for Avron rayon than for cotton. And in any drawing frame blend with cotton, less waste means a cost saving.

EASE OF DYEING. Avron dyes to any shade easily without changing your techniques. In fact, it has a greater affinity for dye than cotton.

LIGHTER FABRICS FOR SAME STRENGTH. Because of the strength of AVRON fibers you can turn out lighter wash 'n' wear fabrics of the same strength as cotton, and a more even fabric because of the uniformity of AVRON yarn. Also, standard weight cotton constructions can be made with 75 to 100% greater tensile strength and tear strength.

PROPERTIES OF AVRON FIBER OF SPECIAL IMPORTANCE TO THE MILL . . .



	100% Cotton	100% AVRON
Stress Strain		
Single Fiber Tensile (grams per denier)		
Conditioned	3.65	4.07
Wet	4.20	2.96
Single Fiber Extensibility		
Conditioned	10.0	30.2
Wet	13.0	37.0
Moisture Regain, Adsorption	7%	12%

COMPARISON OF YARN PROPERTIES

	COTTON*	AVRON
Yarn Count (Cotton System)	30/1	30/1
Turns/Inch	24.0	16.5
Lea Skein—Strength (lbs.) Product	72	100
Single End—Strength (ozs.)	2170	3000
Conditioned	10.2	13.9
Wet	11.8	9.7
Single End—Product		
Conditioned	307	418
Wet	354	290
Single End—Extensibility		
Conditioned	6.1	20.0
Wet	9.3	24.0

*1-1/32" to 1-1/16" Carded Cotton

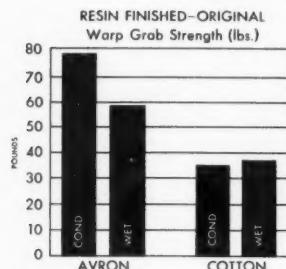
(Finer count yarns can obviously be made from AVRON fibers)

approach to wash'n'wear fabrics warp and **AVRON*** rayon filling high strength

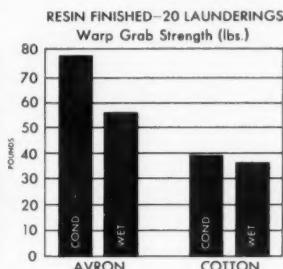
COMPARISON OF AVRON AND COTTON IN FINISHED FABRICS

The following charts clearly demonstrate the superiority of AVRON over cotton.

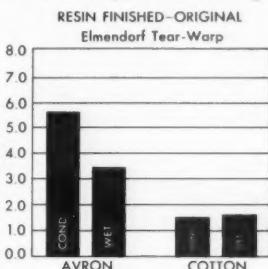
Fabrics were tested before and after 20 home-type launderings at 140° F.



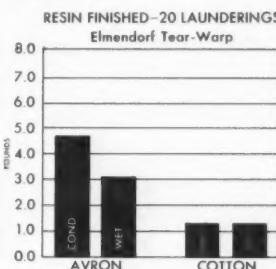
AVRON is about 123% stronger conditioned, about 60% stronger wet than cotton fabrics.



AVRON is 97% stronger conditioned, about 53% stronger wet than cotton fabrics.



AVRON is 273% more resistant to tear conditioned, 106% stronger wet than cotton.



AVRON is 262% stronger conditioned, 138% stronger wet.

HOW COMMERCIALLY-PRODUCED AVRON FABRICS COMPARE WITH MINIMUM REQUIREMENTS FOR WASH 'N' WEAR FABRICS, STATED BY NATIONAL ASSOCIATION OF SHIRT, PAJAMA, AND SPORT SHIRT MANUFACTURERS

136 X 60 COMBED BROADCLOTH

	Required	Cotton Warp AVRON* filling	% Im- provement
Filling tensile strength	25 lbs.	44 lbs.	76%
Filling tear strength	450 gm	1600 gm	256%
Wrinkle recovery	220	250	14%
Wash-wear rating	3.0-5.0	3.0-5.0	—

100 X 58 CARDED BROADCLOTH

	Required	Cotton Warp AVRON* filling	% Im- provement
Filling tensile strength	25 lbs.	40 lbs.	60%
Filling tear strength	450 gm	1600 gm	256%
Wrinkle recovery	220	250	14%
Wash-wear rating	3.0-5.0	3.0-5.0	—

*Trademark American Viscose Corporation

For additional information about AVRON fibers and fabrics write directly to
AMERICAN VISCOSE CORPORATION, 350 FIFTH AVENUE, NEW YORK 1, N.Y.

AVISCO®

Rayon • Acetate • Cellophane

NEW FABRICS

NEW YARNS

New Asbestos Fabrics

Lonzano-Fisher Studios, Inc., at the opening of its new Penthouse showroom, has shown new uses for asbestos. Lonzano has used the mineral as a decorative textile ingredient, in new handwoven fabrics and blinds. For a window treatment he has designed an open grillwork blind which pulls up in soft folds like a Roman shade. For other blinds he has woven white asbestos with vinyl, glass and aluminum yarns, and crossyarns of aluminum. *For further information write the editors.*

Brochure on Troyfelt

Troy Blanket Mills has published an illustrated eight-page brochure describing Troyfelt, its new synthetic non-woven material. The brochure ex-

plains how, in addition to straight Dacron or Orlon fiber construction, Troyfelt can be custom blended of different fibers and combinations for specific uses. The product's applications include filtration, insulation, chemical and moisture resistance uses, sound damping, wicking, padding, and abrasion resistance uses. *For free copies of the brochure write the editors.*

Open-Weave Fabrics

U.S. patent No. 2,870,455 has been granted to Reeves Brothers on a protective cover for outdoor swimming pools. The covers are fabricated of Reevon polyolefin open-weave fabrics woven from ultraviolet stabilized yarns, and marketed through franchised fabricators who manufacture the covers. Advantages of the polyolefin covers are: they are lighter than water and float, with the fibers completely impervious to water; their light weight and open weave permits rain or light snow to pass through the mesh, while barring leaves, twigs and other flotsam. Polyolefins are not affected by mildew or chemicals used in pool hygiene.

For the DYER and FINISHER

New Vinyl Fabric Spray

"Lasticolor," a new vinyl spray particularly applicable to textiles such as drapes and upholstery, has been developed by Taussig Paint Sales Co. The spray is said to dry in a matter of minutes, and gives such materials an entirely new appearance without affecting the hand of the fabric. It comes in a variety of colors. Three Lasticolor formulas are available to assure effective application to a wide variety of fabrics and materials, including cotton, rayon, acetate, nylon, wool, leather, leatherettes, rubber, canvas and plastics. *For further information write the editors.*

Si-Ro-Set Wool Pleating

Resistance to shade change of the Carbolan dyestuffs when used on 100% wool garments durably creased or pleated by the Si-Ro-Set method is cited by Arnold, Hoffman & Co., Inc. With regard to shade change under the Si-Ro-Set process, developed by the Commonwealth Scientific and Industrial Research Organization, Arnold, Hoffman states that the Carbolan range, which comprises 10 dyes, has proved its definite superiority over level dyeing acid dyestuffs, conventional acid milling colors, and chrome dyestuffs. *For further information write the editors.*

Mothproof Decorative Felt

The American Felt Co. is adding Mitin durable mothproofing to its Hushalon wool felt covering. Introduced in the dyeing process,

Mitin penetrates into all fibers to give the felt lifetime protection against wool-eating moths and beetle larvae. The antimoth compound, produced by Geigy, is odorless and non-toxic. A reinforced backing for Hushalon, which is flameproof, soil-resistant and colorfast, permits simple installation. *For further information write the editors.*

Antistatic Spray

Simco Co. offers "Neutro-Stat," a new all purpose antistatic aerosol spray in 16-ounce cans. It is non-oily, non-greasy, non-toxic, non-flammable, and dries almost instantaneously. Neutro-Stat neutralizes and prevents formation of static charges, according to Simco, and also will not foul a machine with oil, grease or other messy deposits. The 16-ounce can costs \$2.75; a carton of 12 cans costs \$27.50. *For further information write the editors.*

Cyanamid Improves Dyes

American Cyanamid has improved the brightness of its jade green vat dye and the printability and resistance to migration of two of its brown vat dyes.

Calcoloid Jade Green NC Sypra Double Paste is said to provide clarity, full-hued purity, good tintorial strength, and all-around good fastness in extra bright shades. This vat dye produces good unions on cottons and rayon.

Higher and more uniform strength prints have been obtained with Calcoloid Brown RRP Paste, an improved brown vat for printing under most aging conditions. Calcoloid Brown GL Double Paste is now resistant to migration during dyeing of pigment-padded cloth. Both brown vat dyes are thin non-settling pastes that have a controlled particle size. *For further information write the editors.*

Water-Soluble Thickener

Natrosol 250, a water-soluble stabilizer and thickener, has been introduced by Hercules Powder. Extensive development work suggests the new chemical's application in water-based emulsion paints, preparation of polyvinyl acetate emulsions, textile warp and finish sizes, paper coatings and paper sizings, latex emulsions for adhesives and coatings, and a wide variety of other uses. Natrosol is available in four viscosity types. *For further information write the editors.*

Improved Nylon Slashing

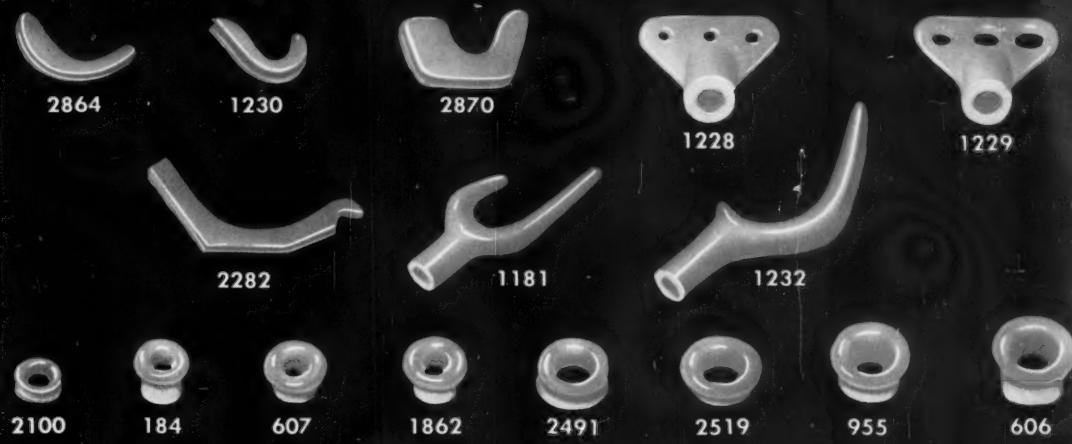
Chemstrand has published a technical bulletin describing the details of its "Chemsize" method for slashing producer twist nylon. The company noted that Chemsize was developed and offered not as a replacement but as an addition to other methods of slashing. Chemstrand reports its method requires only minor modification of existing machinery and enables producer twist yarn to be slashed and woven without prior winding, uptwisting and steaming. *For copies of the bulletin write the editors.*

New Cotton Finish

Monsanto has developed Syton DS, a new method for applying colloidal silica to cotton fibers at the time of mechanical picking of the cotton. Application of the material to cotton fibers, particularly short fibers, upgrades the cotton and results in a number of advantages in the mill, including increased yarn strength, stronger rovings, better abrasion resistance for knitted fabrics, and an increase in mill production efficiency, according to Monsanto. *For further information write the editors.*

(For more Dyeing Notes see Page 72)

MACHINERY and EQUIPMENT SECTION



Mitchell-Bissell "BLUE SATIN FINISH" Porcelain Guides For Circular Knitting Machines and Stop Motions

"BLUE SATIN FINISH"*, the original satin finish for Porcelain Guides, was perfected and introduced by us to the Textile Industry in 1936, with the blue color adopted only as a means of product identification. This finish provided . . . and still provides . . . a surface having far greater resistance to thread wear than available in any other porcelain guide.

"BLUE SATIN FINISH"** Porcelain Guides were used on the first run of Nylon Yarn, and have since been considered standard equipment by leading processors of Nylon,

Dacron, Orlon, Rayon and all the other synthetic fibres.

Because there are other "blue" guides on the market, it is only by specifying the complete name . . . MITCHELL-BISSELL "BLUE SATIN FINISH"** PORCELAIN GUIDES . . . that you can be sure of getting the genuine, wear resistant finish that makes these guides so far superior in service and economy.

MITCHELL-BISSELL "BLUE SATIN FINISH"** PORCELAIN GUIDES are available in thousands of standard shapes, or made to your specifications. Guides illustrated above are shown in approximately actual size.

*Reg. U.S. Pat. Office.

*Southern
Representative:*
R. E. L. HOLT, JR.
& ASSOCIATES,
GREENSBORO, N. C.



MAIN OFFICE
AND FACTORY:
TRENTON, N. J.

NEW

MACHINERY EQUIPMENT

Portable Rug Shear

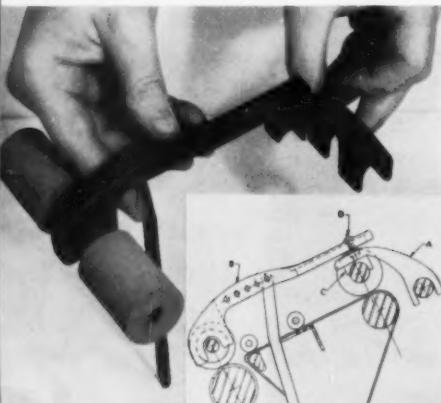
Curtis & Marble Machine Co. has placed on the market its redesigned and improved portable rug shear. The machine is particularly adapted to shear the pills and give a more even surface to hard-to-shear nylon carpeting



The reduction in the weight of the machine, from 200 pounds to 90 pounds, makes for easier handling. The machine's headlight also throws a beam directly on the surface of the carpet. For further information write the editors.

Dixon Changeovers

Dixon Corp. has made available its original Dixon-patented "Saddle Guide" changeover for all "Z" spinning. This top roll system modernizes "Z" drafting, replacing the front top roll cap bar assembly with Dixon's self-aligning antifriction front roll. Its pre-lubed and sealed ball bearings eliminates lubrication and wear while need for lint collection is greatly reduced. The parts are simple and easy to install. For further information write the editors.



Metallic Card Clothing

Oliver D. Landis, Inc., has been appointed exclusive selling agent for the entire southern territory in this country for A. B. Kardbe slag, Norrkoping, Sweden, manufacturers of Duropan hardened point card clothing and flats. Points in the Duropan hardening process are said to receive a certain definite degree of hardness and do not snap off even when subjected to great strain. The firm's High-Low flatstripper fillet can replace spiral brushes on rollers in front of the card. For further information write the editors.

Permanent Color Standards

Permanent color standards designed for color matching of almost any product are now being produced by The Erie Ceramic Arts Co. The majority of these standards are furnished in the form of 4 1/4-inch square steel tiles



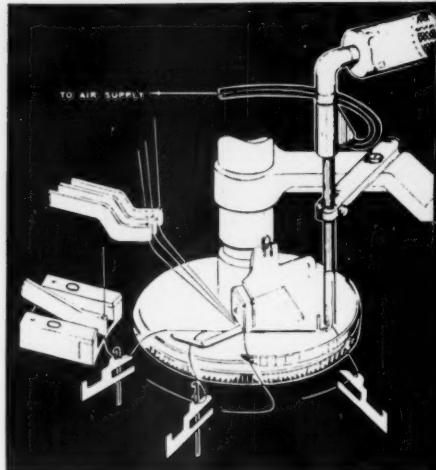
with 1/4-inch flange on all sides. They are finished in a special acid-resisting porcelain enamel of the desired color. Matching is done from paper, plastic or other color chips of the product itself. For further information write the editors.

Synthetic Loom Binder

A synthetic loom binder material reported to have good abrasion resistance, has been developed by Armstrong Cork. The new ma-

terial, a composition of cellulose fibers, ground cork and synthetic oil-resistant rubber compacted under heat and pressure, is not affected by humidity and temperature changes and does not have to be broken in. The Armstrong product can be scribed and is flexible. For further information write the editors.

Dixon Changeover



Scott & Williams Yarn Trimmer

Multi-Blade Yarn Trimmer

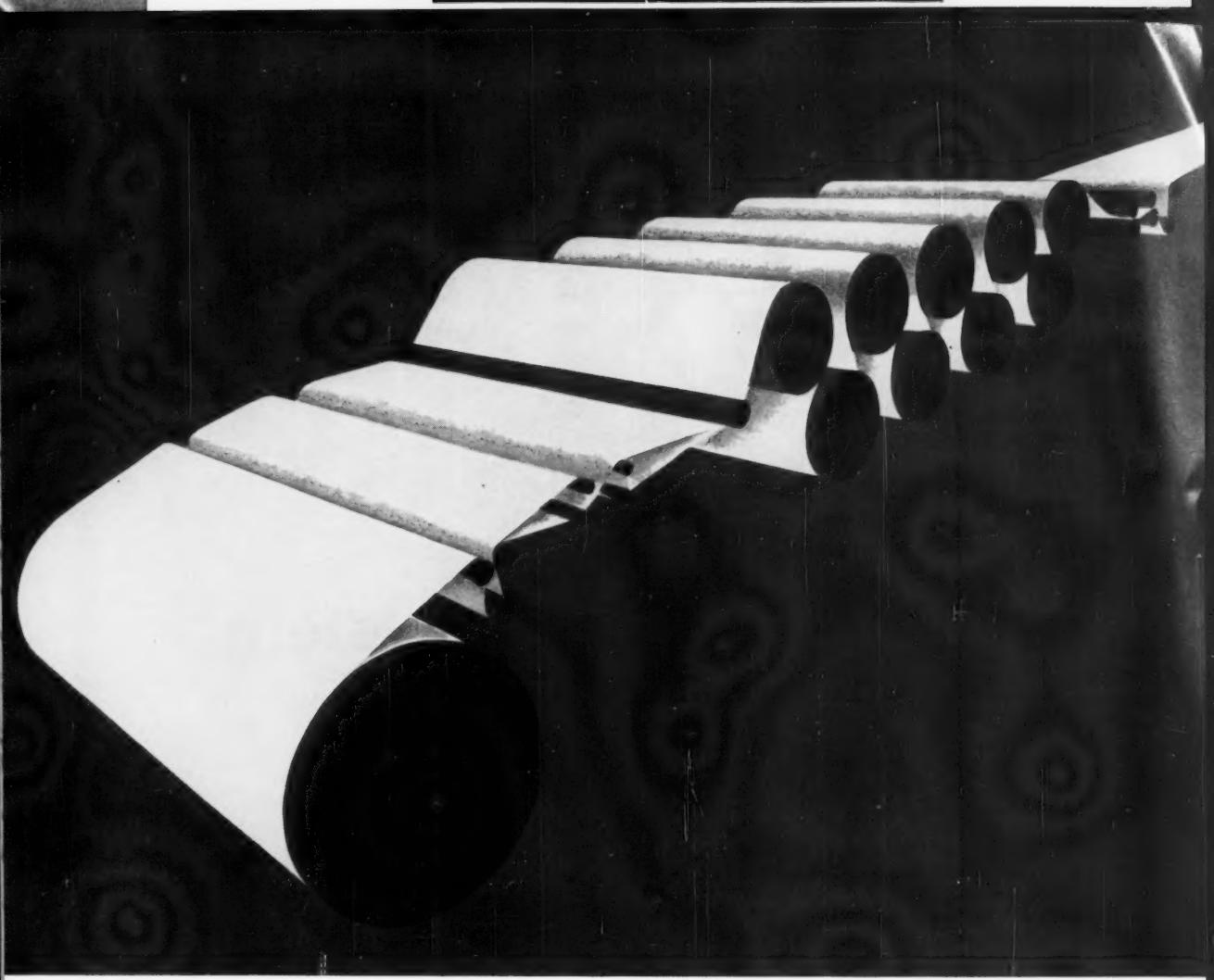
Scott & Williams, Inc., has developed a multi-blade yarn trimmer which is said to trim automatically yarn ends short enough so that they cannot be accidentally caught by the needles or lie inside the fabric. The device thus eliminates tedious hand-trimming operations. This operation is accomplished by permitting the yarns to enter a notch in the outside transfer cam where they are instantly severed by one of the passing conventional dial fins. The new attachment is applicable to present KN machines now in operation, either single feed or equipped with auxiliary feeds and will be available on all factory built machines. For further information write the editors.

Hand Tachometers

Jones Motrola has prepared a catalog which describes in detail the firm's hand tachometers and their use in speed indication. Description of sizes and ranges available, price information and technical data are provided in the catalog, which also contains information on standard accessories for all Jones hand tachometers. For copies write the editors.

New Whitin Frame

A standard spinning frame without some of the extras of the Piedmont frame will soon be available from Whitin Machine Works, according to J. Hugh Bolton, president. A new price for the frame has not been set yet, Bolton said, but it would not be a "stripped" model. It will have standard components but will be sold without such features as the single spinning drive. Whitin is going to increase its prices but the extent of the rise has not yet been made known.



The yarn path for BETTER loom beams runs through the Kidde-Johnson Slasher

Of course, you want tightly and evenly-packed loom beams. You want size evenly applied, with careful control of pick-up, and fast drying at regulated temperatures. You want controlled moisture content in the yarn after drying. You want equipment that's easy to maintain. The Kidde-Johnson Slasher meets your requirements perfectly. Here's why:

1. Controlled tension
2. Rigidly supported loom beam
3. Fingertip calibration of stretch
4. Precise control of size level and temperature
5. Uniform application and penetration of size
6. Geared cylinder drive
7. High pressure, Teflon-coated cylinders

8. Stainless steel components

Kidde makes the Slasher to suit your production requirements

The Kidde-Johnson Slasher will slash yarns of any fiber — filaments or spuns — from the finest count for delicate fabrics to the heaviest denier tire cord.

It is constructed to fit your requirements — for cotton system slashing, silk system slashing, or both.

Its production capacity can be expanded to meet future needs. Drying cylinders, single or combination quetsches can be added, head ends extended or widened.

For full information about complete new slasher installations as modernization of your present equipment, call PILGRIM 8-8100 or write . . .

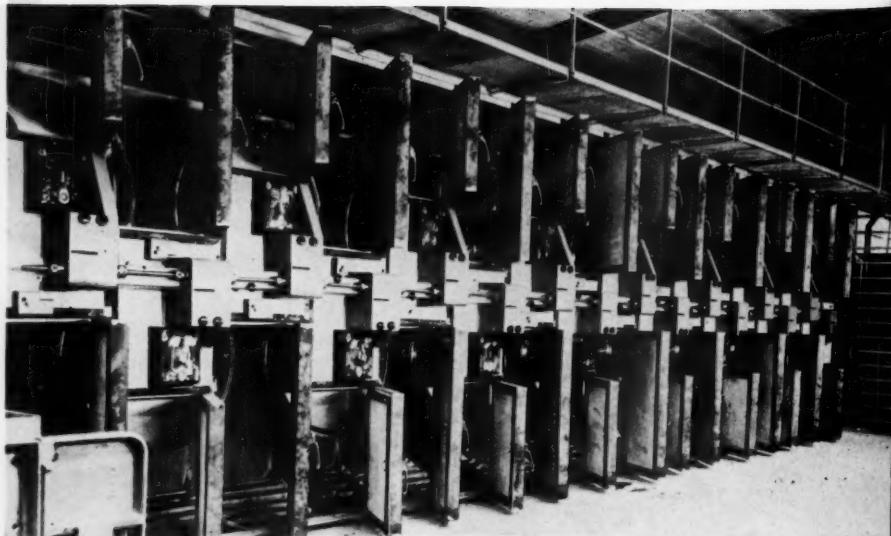
TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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Kidde

HOW IT LOOKS—A Saco-Lowell Fleissner tow dryer installed in a big man-made fiber plant. Doors are open to show staggered drums.



Tow drying

by the Fleissner system

By Walter Lill,
SACO-LOWELL SALES ENGINEER

RECENT improvements in manufacturing manmade fibers have caused processing of such fibers in the form of tow to become increasingly advantageous. Washing and drying of tow needs special equipment since the capillary force makes it difficult to penetrate the tow by liquids or air. The Saco-Lowell Fleissner perforated drum dryer has shown itself a good way to handle the drying of tow.

The Fleissner drying system incorporates a series of perforated drums either in staggered arrangement or in one level. Each drum is connected to a highly effective fan. The material is held on the outside of the perforated drum merely by suction and the fan recirculates the air through the heating coils into the drying chamber.

This machine has a low steam consumption because of the close cycle of recirculated air and compactness which reduce radiation losses. Since this dryer also operates on a counter flow principle, extremely even drying results can be obtained.

For drying tow, two approaches are possible. One is the well-known procedure of folding the tow onto an apron in order to form a more or less uniform blanket which is fed to the drying apparatus. (See Figure 1.) Conventional folding devices used to date have the disadvantage of laying the tow onto the conveyor in a rather irregular pattern. Overlapping of the tow cannot be avoided. Wherever two parts of the tow lay on top of each other, there is the inevitable danger of high residual moisture in this spot. To

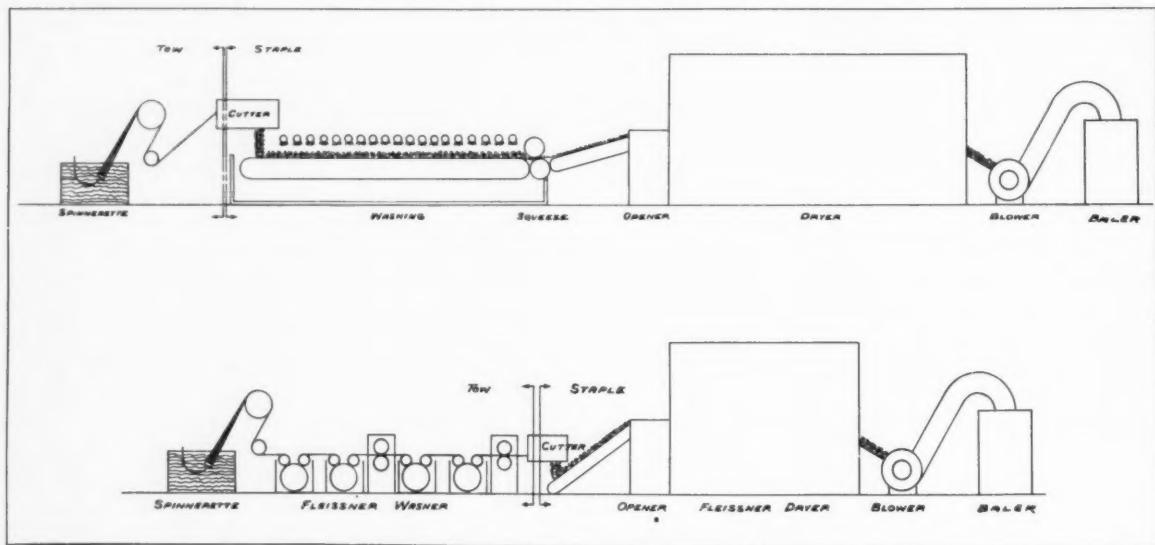
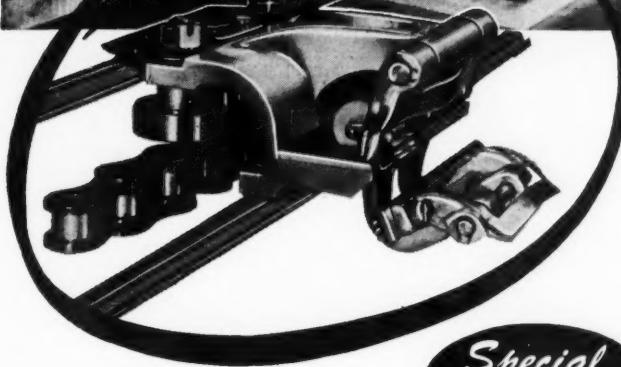
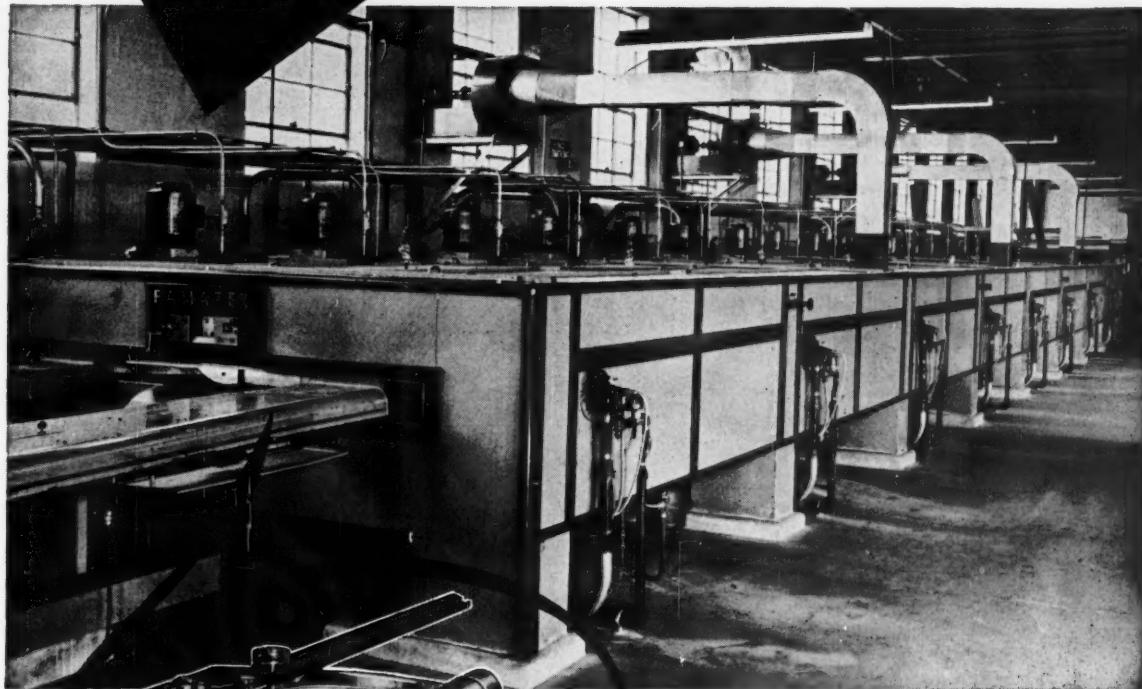


Figure 1—Diagrams showing (top) conventional system and (bottom) Fleissner system of tow drying.

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obtain a uniform final moisture content, overdrying of the material cannot be avoided, and large and expensive humidifying sections are required to put back lost moisture.

The newly developed Fleissner tow folding device has no oscillating parts; it lays down the tow in an extremely regular pattern consisting of loops arranged parallel to each other with no overlapping. The feeding device, comprising two reel shaped feed rolls, delivers the tow to the folding mechanism which consists of a V-belt to which steel rods are fastened. These rods passing below the feeding reels in one direction intercept the tow as it is delivered from the feeder at spinning speed resulting in the formation of loops.

Because the speed of the rods (or feeding speed) is infinitely adjustable, the length of the individual loops can be altered, and the angle formed between the tow and the front edge of the conveying belt can also be adjusted. The loops thus formed from one continuous tow are then applied by the folding mechanism to the conveyor belt so that they form together a veritable blanket. In this shape the tow is delivered to the processing stage. Advantages of the Fleissner Tow Folding Device are as follows:

The tow is applied without tension.

The goods are handled with utmost care.

No material accumulates at the turning points.

Shrinkage of processed goods on subsequent machinery is avoided.

The combination of the Fleissner tow folding device with the Fleissner perforated drum dryer has proven successful in drying crimped tow which has to be handled entirely tensionless. The tow, held on the surface of the perforated drums merely by air suction, is totally relaxed and can shrink to its natural state. The Saco-Lowell Fleissner system described above combines a high drying efficiency on a very small floor space with extremely even drying results at spinning speeds up to 1500 feet per minute.

Since the tow dryer has individual speed variators on each drum, tension can be applied to the tow whenever this is required and also tensionless drying can be insured the same way, handling a total shrinkage of up to 28% while drying. This method of running the tow straight can be used most advantageously whenever a heavy tow is processed or several tows are to be run simultaneously (total denier of up to 1,000,000 or more) at comparatively slow spinning speeds.

Wherever cooling of the tow is required each of the two processes described above can be used. In order to get maximum drying results in the second method mentioned above, which means handling the tow in one straight line, it is advantageous to spread the tow as wide as possible. To give an example, a rayon tow of approximately 800,000 denier should be spread out to approximately ten to fourteen inches in order to expose as much surface to the drying air as possible.

In several installations, the tow is taken in the form of the spinning tapes as they come from the spin nozzles and guided through the Fleissner drum wash bowl. This machine consists of a perforated drum connected to a pump recirculating an enormous volume of liquid through the processed goods and thus cutting down the washing time required to a fraction of what is customary today. The number of liquids which have to be applied to the tow determine the necessary number of drum wash bowls.

After the wet application, the tow passes through a squeeze and goes right into the dryer, at the end of which the cutter will be located. From there on, the material is conveyed to the baling press. Since the whole unit is self-feeding, no leader is required and starting operation does not constitute a problem.

Recently, a significant event in the history of textile drying occurred when a fully conditioned Saco-Lowell Fleissner suction drum dryer produced staple fiber with a residual moisture content of 11% with a tolerance of +0.4%. This same efficiency can be expected in tow drying operations. Waste and losses are reduced to a minimum. When the cost-saving

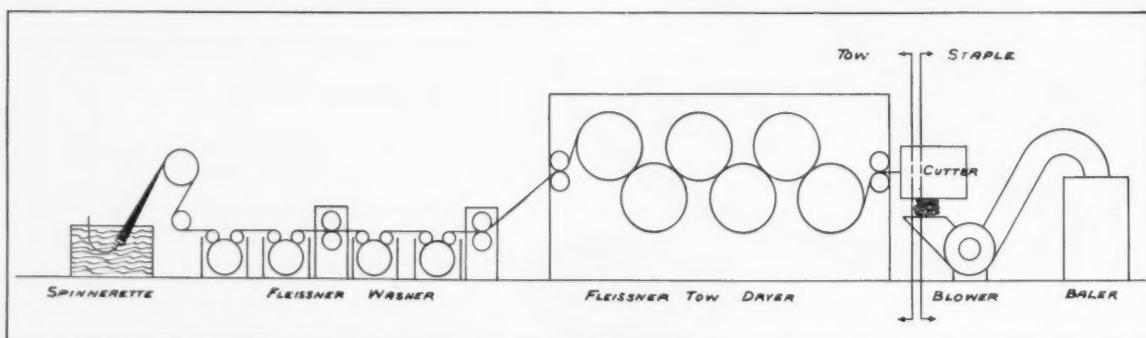


Figure 2—Diagram of exclusive Fleissner system, showing arrangement of drums in drying chamber.

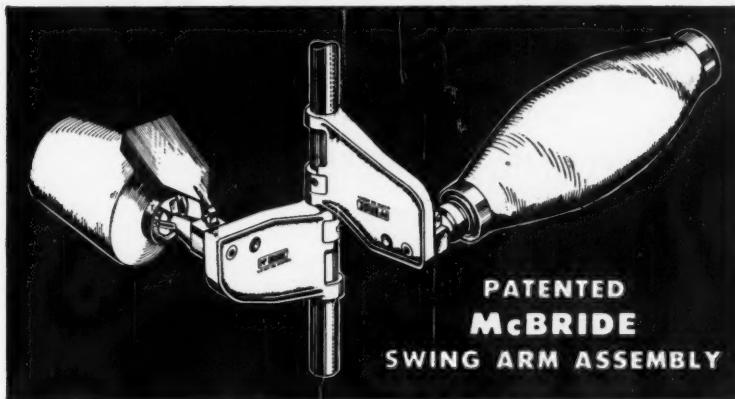
Another approach to the problem is running a single tow or more tows simultaneously in a straight line through the Fleissner dryer. (Figure 2). Since every material has a natural minimum drying time which cannot be cut down, the length of the machine is determined by the drying characteristics of the material as well as by the spinning speed. A Fleissner perforated drum dryer is specifically designed for this purpose, with the drums staggered in two levels, thus giving the maximum possible drying surface on the shortest possible floor space.

advantages are combined with the reduction in steam and floor space, the Saco-Lowell Fleissner method can be considered an efficient approach to synthetic tow drying.

The Fleissner suction drum dryer is not restricted for drying only, but can also be used advantageously for steaming, curing, setting, and cooling operations. With very little steam pressure, up to 97% steam saturation can be obtained in the machine. The drum wet applicator can also be used for continuous dyeing with reactive dyestuffs. ■

McBRIDE CREEL CORNER

NEW SWING ARM ASSEMBLY FOR McBRIDE CREELS



To meet the demand for equipment to accommodate the modern heavier and longer yarn packages, Edward J. McBride Co., Inc., have developed a new Swinging Package Arm for Magazine Creels. Besides being of more substantial construction, the new arm has an adjustment to vary the swing radius while retaining the patented Ball Retent Positioning Lock.

The Bowed Spring Spindle is a separate detachable unit making replacement or repositioning a simple operation without any dismantling.

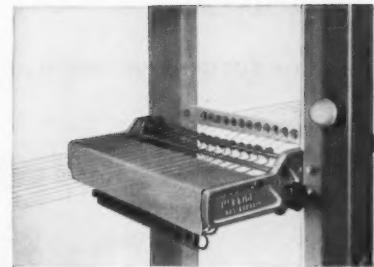
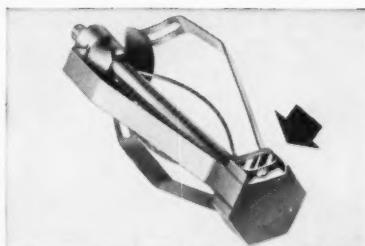
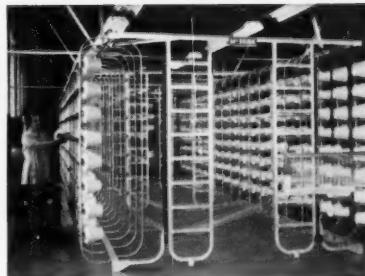
McBride Quik-Change Cone Holders and Combination Adapters for Chemstrand and DuPont pins are used in conjunction with the Bowed Spring Spindle. Together the Bowed Spring Spindle and the Quik-Change Cone Holder will handle most types of packages.

A new, self-adjusting Anti-Snagging Pad which follows the back edge of the package during draw-off is also featured and is optional. This thick polyurethane pad gently but firmly follows the contour of the package and is the only self-adjusting pad that continuously keeps the yarn from falling off the back of the cone.

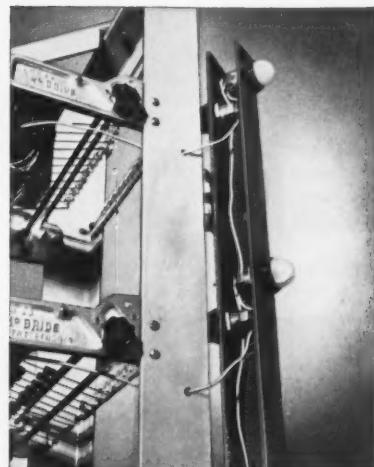
LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

Complete engineering service is part of every McBride installation



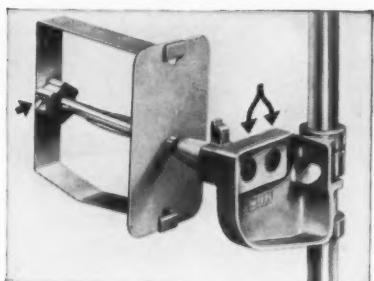
Standard Stop Motion in operating position. Colored button controlling entire bank is on; 3 individual switches controlling 3 drop wires on off position for 3 inactive ends. Note ends may remain threaded through drop wires.



McBride 3-Way Signal Light. The light channel is of heavy gauge steel that protects the wiring. It is hinged to permit ready access. Bulbs are quickly replaced without opening the channel.

These light units are adaptable to your existing stop motions.

Write us about how McBride Instant-Stop and the McBride 3-Way Signal Light can be adapted to your creel situation.



Quik-Change Large Package Holder supports packages with inside diameter of 2" or greater. Positive spring action holds package firmly. Press button thumb release permits quick change from one style package to another.

Note that spindle arm can be repositioned for shorter radius as desired. Such flexibility saves space and increases adaptability. McBride Quik-Change Large Package Holder is available in a full range of sizes to handle any style of large package.

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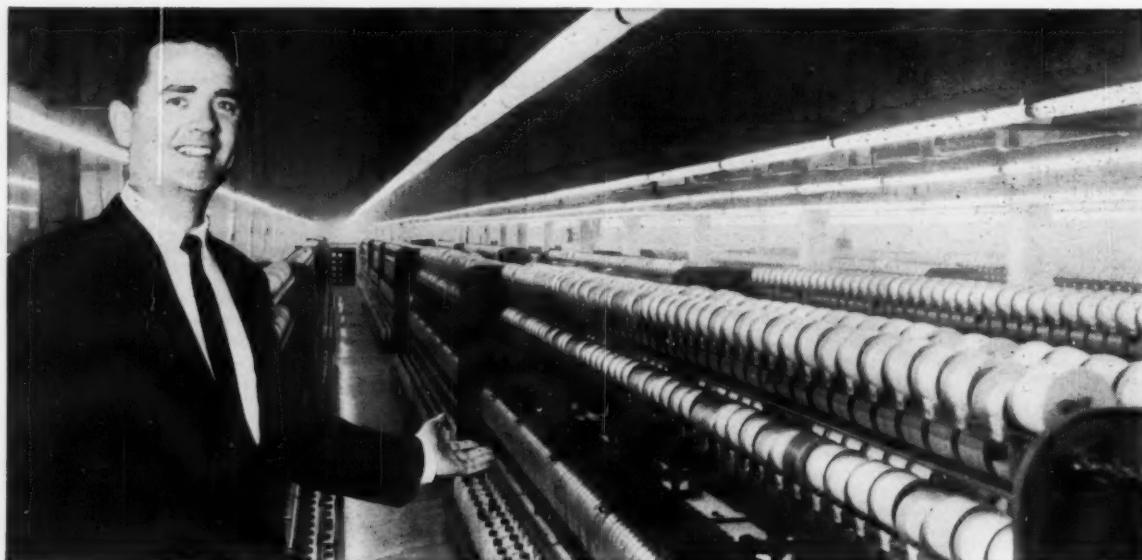
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Guide to Exhibitors

AATCC National Convention

Oct. 7-9, Washington, D. C.

AN ALERT and forward-looking dyeing and finishing industry eager to produce better products and give better dyeing and finishing services will be strongly evident when the National Convention and Exhibit of the American Association of Textile Chemists and Colorists convenes Oct. 7 to 9 at the Sheraton-Park Hotel in Washington, D. C.

Heavy attendance and keen interest is expected from all areas of the country where dyeing and finishing is carried on and where dyestuffs are manufactured. The fact that the convention this year is being held in Washington, close to eastern textile centers and not far from the growing dyeing and finishing industry of the South is regarded as a factor that will bring out many members and guests.

In the Exhibit accompanying the convention there will be approximately 25 firms displaying products and services. They include chemical and dyestuff manufacturers, scientific instrument makers and manmade fiber producers. The convention this year is sponsored by the AATCC's Southern regional organization.

The schedule of technical programs for Oct. 8 and 9 is as follows:

Thursday morning Oct. 8: 9:15 to 12:15, Symposium on "Wash and Wear Fabrics" presided over by Dr. Paul Stam, Director of Research, J. P. Stevens & Company, Inc., Greensboro, N. C.

Thursday afternoon: 2:15 to 4:30, Symposium relating to the Dyeing and Finishing of Synthetic and Natural Fiber Blends, presided over by James E. Greer, Chief Chemist, Dyeing and Finishing Division, Burlington Mills, Inc., Greensboro, N. C.

Friday morning Oct. 9: 9:15 to 12:15, Symposium "New Dyeing and Finishing Processes", presided over by Fred Fortress, Manager Dyeing and Finishing Laboratories, Celanese Corporation of America, Charlotte, N. C.

Friday afternoon: 2:00 to 4:30, Intersectional Contest, presided over by Thomas J. Gillick, Jr., Director of Engineering, American Felt Company, Glenville, Connecticut. Details on the participants and subjects selected to be announced later.

The Awards Luncheon is scheduled for 12:30 P. M. October 8th.

Exhibitors and Exhibits

**ADELL CHEMICAL CO.,
LESTOIL DIVISION
HOLYOKE, MASS.—(37)**

EXHIBIT: see under Lestoil, Inc.

**AMERICAN ASSOCIATION OF TEXTILE
CHEMISTS & COLORISTS
LOWELL, MASS.—(31, 32, 33)**

EXHIBIT: How AATCC serves the textile and related industries. New developments in the Association's research and technical activities.

IN ATTENDANCE: Dr. Harold W. Stiegler, George J. Mandikos, G. Robert Thompson, Glen M. Kidder and Miss Roby R. Hoffman.

**ATLAS ELECTRICAL DEVICES CO.
CHICAGO, ILL.—(39)**

EXHIBIT: The latest models of their Fade-Ometer, Launder-Ometer, Accelerator, Scorch Tester and Random Tumble Pilling Tester as used in the textile industry for evaluating the permanence and performance characteristics of their products.

IN ATTENDANCE: J. E. Norton, M. J. Babey and R. R. Metzinger.

**BECCO CHEMICAL DIVISION—FMC
BUFFALO, N. Y.—(69)**

EXHIBIT: Various applications of hydrogen peroxide, especially those in the textile field.

IN ATTENDANCE: D. H. Nelson, A. P. Shuttles, J. R. Hopkins, M. A. Noonan, P. D. Caine, J. F. Whalen, F. X. Nerney, D. S. Quern, E. A. Dalmas, B. J. Bishop, B. K. Easton and E. J. Elliott.

**CIBA COMPANY, INC.
FAIR LAWN, N. J.—(19, 20, 21)**

EXHIBIT: Cibacron and Cibacrolan dyes in dyeing and printing; Microfix system in dyeing; illustration of their permanent water-repellent Phobotex FTC.

IN ATTENDANCE: Dr. Charles J. Weidmann, E. L. Caswell, E. P. Ward, F. Raff, Paul J. Luck, Peter Cook, Rudolf Berthoud and Ernest H. Hart.

**CUSTOM SCIENTIFIC INSTRUMENTS, INC.
KEARNEY, N. J.—(3)**

EXHIBIT: Testers to aid production, quality control and research as follows: Roll Runout Indicators, Traveler Hardness Tester, Gear Runout Tester, C & R Tester, Low Pressure Thickness Tester, Pilling Tester, Flex Tester, Cohesion Tester, and Sensing Head for Custom Tension Recordograph.

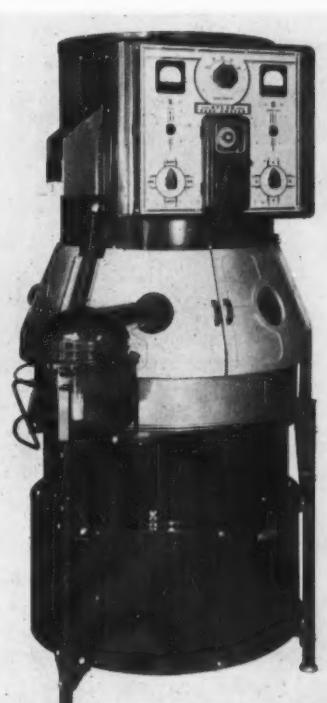
IN ATTENDANCE: H. J. Bultman, Jr.

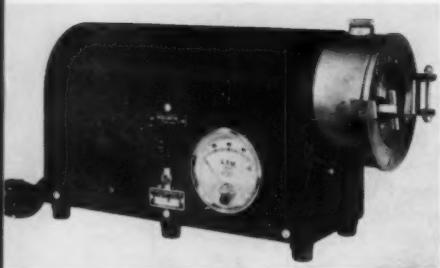
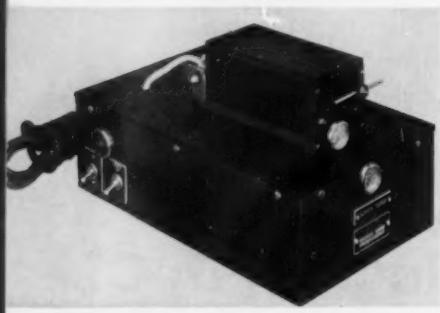
**DAILY NEWS RECORD
NEW YORK, N. Y.—(77)**

**DIAMOND CRYSTAL SALT CO.
ST. CLAIR, MICH.—(60)**

EXHIBIT: Various types of Salt, both High-

Atlas Electric Devices Model FDA-RC Fade-Ometer.





Atlas Electric Devices Model SO-3 Scorch Tester (top) and Model AB-7 Accelerotor.

grade Evaporated and pure Louisiana Rock Salt. Technical literature pertaining to these products, as well as samples of material which has been processed with Diamond Crystal products.

IN ATTENDANCE: W. Lonsdale and C. W. Schornstheimer.

**GASTON COUNTY DYEING MACHINE CO.
STANLEY, N. C.—(48)**

EXHIBIT: They expect to have on display various auxiliary items, as well as samples of beam dyed fabrics.

IN ATTENDANCE: Gordon Hacker, A. P. March and W. J. Newcomb.

**B. F. GOODRICH CHEMICAL CO.
CLEVELAND, OHIO—(61)**

**GOODYEAR TIRE & RUBBER CO.,
CHEMICAL DIV.
AKRON, OHIO—(56, 57)**

EXHIBIT: Typical applications for Pliolite, Chemigum and Plovic latices in the textile industry. A variety of textile samples will be displayed to illustrate the use of these latices in non-woven fabric binders, carpet backings, fabric finishes, warp sizings and printing inks. Technical information on a new resin dispersion, Plolite Latex 141, will be available at the booth, along with data on its textile applications.

IN ATTENDANCE: H. R. Thies, C. O. McNeer, J. E. Warner, W. F. Gerrow, A. R. Merritt, J. S. Brice, J. E. Weldon and J. J. Houlette.

**HILTON-DAVIS CHEMICAL CO. DIVISION
CINCINNATI, OHIO—(16-17)**

EXHIBIT: The following of their products will be displayed on revolving pylons: "Hiltone" water-in-oil pigment printing colors, "Seaboard" oil-in-water pigment printing colors and "Skytone" pigment padding colors; also Naphthols, fast color salts, fast color basis, Spectrosols, and Optical Brighteners.

IN ATTENDANCE: Nelson S. Knaggs, S. Y. Stribley, III, William A. Green, William S. Pearson, Willard Sharp, J. Dorman Compton, George Nickler, Roy Wiggins and Arthur S. Davis.

**HUNTER ASSOCIATES LABORATORY, INC.
MCLEAN, VA.—(47)**

EXHIBIT: Hunterlab Color Difference Meter Model D25 for color matching and measurement of small color differences; Hunterlab Whiteness Reflectometer Model D40 for measuring whiteness, reflectance, yellowness and opacity of white and near-white materials; Hunterlab Glossmeter Model D16 for measuring luster of fabrics, fibers and yarns. Techniques for fluorescent brightness evaluation and direct color-difference measurement will be demonstrated.

IN ATTENDANCE: Richard S. Hunter and Mary B. Spicer.

**INDUSTRIAL RAYON CORP.
NEW YORK, N. Y.—(22)**

EXHIBIT: The theme of their exhibit will be on the latest progress in the field of drip-dry draperies and their display items will be centered around this theme.

The display will also show the adaptability of rayon to chemical additives for best results. This program is identified as IRC 300 W-H, thus promoting a special rayon yarn for the wash and hang drapery field. The fabric will be washed and dried before the public and samples will be distributed as evidence of the success of this new development.

IN ATTENDANCE: V. J. Dionne.

**INSTRUMENT DEVELOPMENT
LABORATORIES, INC.
ATTLEBORO, MASS.—(36)**



Hunterlab Model D 25 Color and Color Difference Meter.

EXHIBIT: Their new Model D Color-Eye, a combination colorimeter and spectrophotometer for laboratory and production applications of color formulation, shading, grading and evaluating Fade-Ometer tests on all types of fabrics. Also a Textile Sample Spinner for viewing highly directional samples, such as denim, tricot, hosiery, knit goods, etc.

IN ATTENDANCE: Donald R. Hall and Forest R. Johnson.

**INTERNATIONAL SALT CO.
SCRANTON, PA.—(4)**

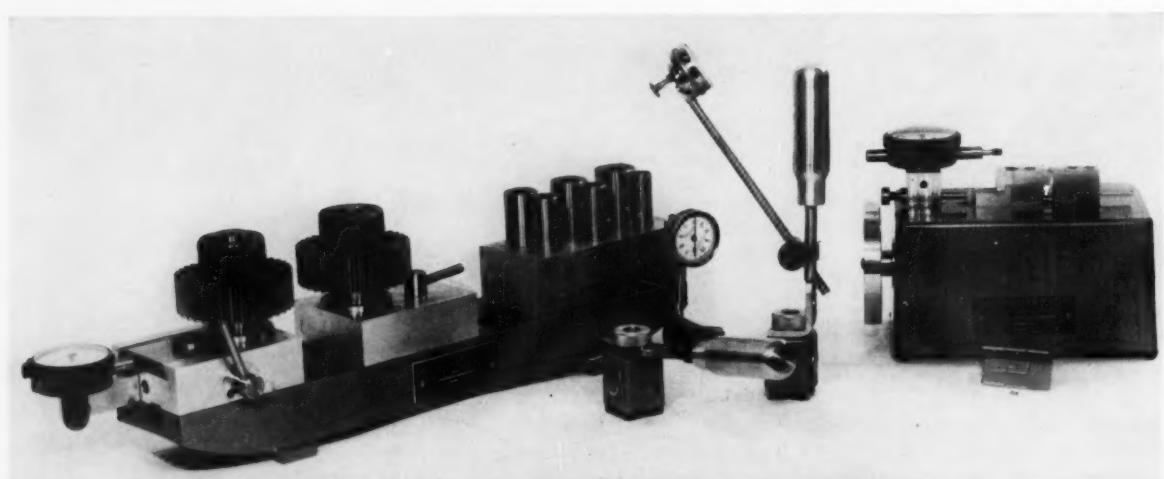
EXHIBIT: Their complete line of Sterling Salt products for the textile industry; also their new "Brinomat" Plastic Evaporated Salt Dissolver.

IN ATTENDANCE: W. W. Harris, Jr., A. J. Hulsebosch, N. M. Agnew and O. W. McKeown.

**LESTOIL, INC. (Subsidiary of Adell
Chemical Co.)
HOLYOKE, MASS.**

EXHIBIT: Various applications of D-2 Lestoil in the textile industry.

IN ATTENDANCE: Robert R. Mercer, Reynolds Hays, Howard Gerlack, Charles S. Tanner and Ernest Blakeley.



Custom Scientific Gear Runout Tester (left), Roll Runout Indicator (center), and Traveler Tester.

METTLER INSTRUMENT CORP.
HIGHTSTOWN, N. J.—(2)

EXHIBIT: Representative models of their precision and analytical Balances, featuring their new Type H23 C10/13 Yarn Balance.

IN ATTENDANCE: D. L. Jones, Neal L. Cooper and Robert Moeller.

MORTON SALT CO.
CHICAGO, ILL.—(66)

EXHIBIT: The theme of their exhibit will be the correct application of various salt grades for certain dye applications with emphasis on the new Fiber Reactive Dyes. This will be explained by the use of photographs of typical installations, together with charts and maps.

IN ATTENDANCE: J. M. Culp, Frank E. Etzel, Jr., E. R. Ravenel and B. W. Jennings.

NOPCO CHEMICAL CO. and Subsidiary
JACQUES WOLFE & CO.
NEWARK, N. J.—(53)

EXHIBIT: Nopco will primarily promote new products and will show materials treated with Nopco 9092 fulling and scouring compound, Nopcotex AR-35 cationic softener, Nopco KF-99 all purpose textile defoamer, and Polymul MS-40.

Jacques Wolf will exhibit printed fabrics prepared with their Gums, as well as samples of their Monopol Oil, Sodium Hydrosulfite, printed Gums, Enzymes and textile auxiliaries.

IN ATTENDANCE: From Nopco: R. F. McClellan, L. E. Rossiter, W. F. Dolan, D. S. Rion, E. Bruppacher, D. J. Schaaf, G. R. Zust, C. H. Lighthipe, R. G. Schaubhut and P. Carlson. From Jacques Wolf: G. J. Desmond, G. W. Apsey, W. E. Brewer, D. A. Hoffman, M. G. Thruston and M. F. Costello.

ONYX OIL & CHEMICAL CO.
JERSEY CITY, N. J.—(13)

EXHIBIT: Latest technology regarding developments made with Aston 108.

IN ATTENDANCE: Philip E. MacLean, Louis S. Goldberg, Morton Schlesinger and Clarence E. Pickard.

ROHM & HAAS CO.
PHILADELPHIA, PA.—(68)

EXHIBIT: They will feature the use of their acrylic emulsions as fabric backing and binder, as well as the use of their Rhonite resins in the finishing of fabrics.

IN ATTENDANCE: R. G. Thomas, J. T. Taylor, T. G. Sloan, H. F. Lawton, E. J. McNamara, and R. G. Lawrence.

SANDOZ, INC.
NEW YORK, N. Y.—(14)

EXHIBIT: Space to be used as reception booth.

IN ATTENDANCE: Technical representatives.

TANATEX CHEMICAL CORP.
KEARNEY, N. J.—(55)

EXHIBIT: Samples of their chemicals for processing; polyester fabrics printed with the new Tanalid Process, as well as various carrier-dyed goods. Recent developments made in their research laboratories will be demonstrated.

IN ATTENDANCE: Peter J. Scott, Dr. Sidney M. Weinstein, L. C. Shive, Adolf Dabal and Theodore B. Maheim.

TESTFABRICS INC.
NEW YORK, N. Y.—(30)

EXHIBIT: Fabrics and skeins of yarn for laboratory use; demonstration of weighing of skeins; AATCC Standards handled by Testfabrics Inc.

IN ATTENDANCE: Werner Klaas and Marianne Blunck.

TEXTILE BULLETIN
CHARLOTTE, N. C.—(34)

TEXTILE INDUSTRIES
ATLANTA, GA.—(38)

TEXTILE WORLD
NEW YORK, N. Y.—(1)

UNION CARBIDE CHEMICALS CO.
NEW YORK, N. Y.—(58 & 67)

EXHIBIT: Carbide chemicals for the textile industry, introducing their non-soiling UCON Textile Lubricant SR-2 and six other Lubricants; Intermediates for crease-resistant finishes; and Intermediates for textile Softeners.



Instrument Development Laboratories Color Eye.

IN ATTENDANCE: Technical representatives from the Eastern Division and specialists from Mellon Institute and New York.

WALLERSTEIN COMPANY
STATEN ISLAND, NEW YORK,
N. Y.—(54)

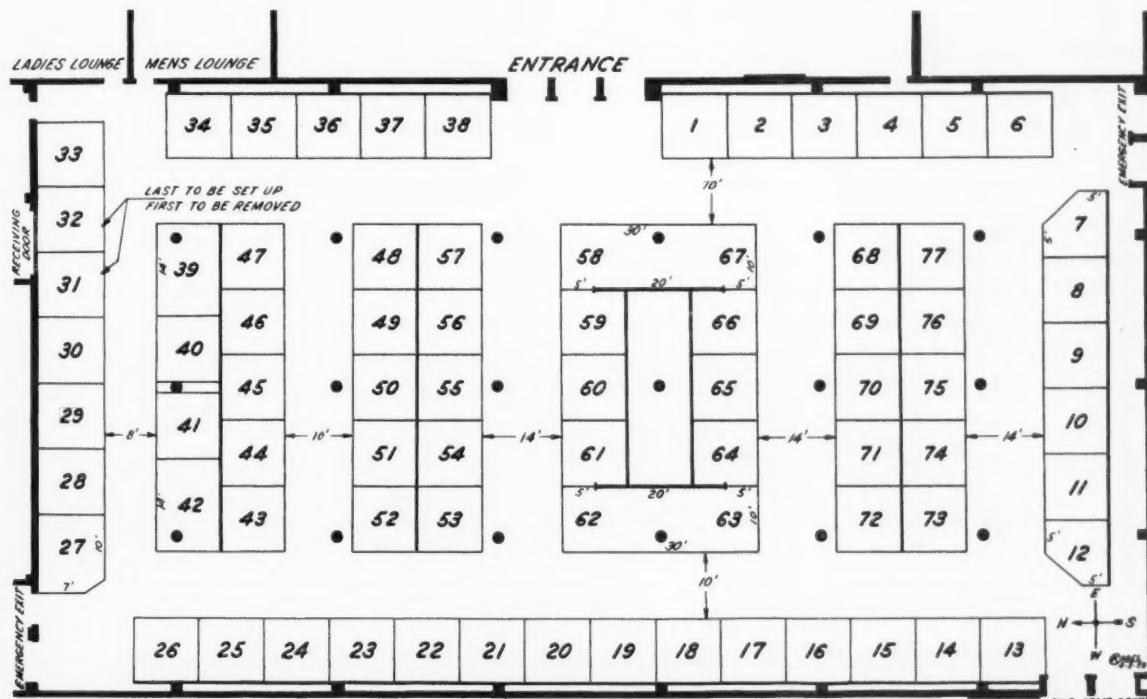
EXHIBIT: Reception booth with products display.

IN ATTENDANCE: James J. Casserly, J. Andrew Clark, J. L. Huckabee and J. C. Robertson.

WARRICK CHEMICAL DIVISION,
SUN CHEMICAL CORP.
NEW YORK, N. Y.—(59)

EXHIBIT: Their Norane-Permafresh finish for knits and woven fabrics, featuring its outstanding characteristics.

IN ATTENDANCE: Norman E. Alexander, Eric N. Blackstead, William V. Machaver, Harold C. Whittemore, Angelo J. Picciotti, Herman B. Goldstein, Louis A. Edelman, Thomas B. Spence, Steve Nye, Dr. Gerhard E. Sprenger, David Koenig, I. F. Laramee, William E. Breagy, Charles A. Lamendola, Roscoe J. Breazeale, A. Lee McArthur, 3rd, W. E. H. Seary 3rd, Arthur L. Watson, George D. Maynard, Jr., John M. Senesac, Stuart L. Sperber and Fred Hennessey.



Floorplan of Exhibition



THEY'RE YOUNGER THAN NYLON—These Delaware girl scouts were not yet born when nylon came into the world. To honor nylon's 20th birthday this year, Diana Farney (left) and Beverly Holmes of Wilmington wore these nylon tricot scarves to the national girl scout roundup this summer in Colorado.

Saco-Lowell Backlog

Reporting the highest textile machinery order backlog in many years and forecasting a profitable fourth quarter for the company, Thomas J. Ault, president of Saco-Lowell Shops, said that losses for the first half of 1958 were approximately as predicted last December. First half losses amounted to \$2,119,336. Ault, in commenting on the loss, noted that rehousing held up plant operations in the south while the recent recession made prices unsatisfactory. But he said, prices were advanced as of August 1, 1959.

Ault also announced the promotion of J. Woodward Hubbard as vice president of sales. He formerly was general sales manager of the firm's Textile Machinery Division.

New orders received by the firm, include 21 Saco-Lowell model 57 combers and 20 FS-2 roving frames from Parkdale Mills, Gastonia, N.C. The Maiden, N.C., plant of Carolina Mills recently installed six FS-2 roving frames, and has placed an order for 72 card oilers, 36 deliveries of 4 over 5 versa-matic drawing, four FS-2 roving frames and 60 SJ-3H spinning frames, all for installation at the Carolina plant at Lincolnton, N.C., formerly known as Glenn Mills.

Warning to Cotton Growers

"With mechanization, we have learned how to produce cotton economically and abundantly. But, with these same tools, we are destroying the natural spinning qualities that are absolutely necessary if cotton is to continue to hold its share of the markets." This warning came from T. D. Truluck in a talk before the California Cooperative (Cotton) Ginners Association. Truluck, who is manager of the Cotton Division of Deering Milliken Service Corp., referred to USDA tests showing effects on cotton of overcleaning and overginning. Overmachining, he said, will force textile mills to use other fibers instead of cotton.

Caprolan Carpet Promoted

In the past few months, Allied Chemical's textured Caprolan filament nylon yarn has been subjected to a rigorous testing program in carpets, has been used in carpets on a new luxury liner, and has been the theme of an unusual store promotion.

The purpose of Allied's testing program is to establish a correlation between actual carpet wear and laboratory test results and to provide a practical basis for the company's labeling program for textured Caprolan. The first phase has included pile yarns of wool, acrylic and spun nylon fiber as well as textured Caprolan.

The tested carpet was on the floor of New York's Pennsylvania Station for two months at a location where it received traffic approximately equal to the wear a family of four would give a carpet in a year.

After Allied textile technologists correlate the findings with those of independent testing laboratories, the results will be made available to the company's textured Caprolan customers.

Croft Carpet Mills' "Resort" is the textured Caprolan carpet that was installed aboard the S. S. Aquarama, a Great Lakes luxury ship carrying passengers and automobiles between Detroit and Cleveland. The carpet is in the ship's entertainment center.

The retail promotion was conducted by Simpson-Miller, Indianapolis specialty store which moved a local radio station into its store on August 17th to launch a special five-week promotion of Allied's textured Caprolan and Croft's Resort collection.

How Cuba's Rayon Plant Fares

The Hedges interests' rayon plant in Cuba, Rayonera de Matanzas, has been under Cuban Government "intervention" since January 16 of this year. Joaquin Vazquez Alvarado, the Government-appointed "manager interventor," said the plant has been "taken over temporarily" by Cuba, representing not a "seizure" but rather "an interim assumption of a definite voice in management until such time as the authorities have satisfied themselves as to the nature and extent of the financial relations which should prevail in the future in each instance."

The financial transaction is believed to involve, in the case of Rayonera, a \$16,000,000 sale and lease-back operation (under the previous government). At the same time, the sum of \$8,000,000 is believed to have been left on deposit at "bandes" (Economic and Social Development Bank, a Cuban Government credit agency) in order to guarantee fulfillment of obligations contracted for by the Hedges interests.

A Government "interventor" will not only review the validity of former financing but also re-examine the desirability and soundness of expansions which have been authorized under former financing.

'ScottFoam' Interlining

"Scottfoam," an interlining said to "breathe," has been developed by the Foam Division of Scott Paper Co. Scottfoam, the company's first nonpaper product, consists of urethane foam material which is completely open-cell in structure.

"Breathing" of the interlining through these tiny open cells is said to make possible high insulation with low weight. The first garments with the new interlining will be available in stores this fall. For further information write the editors.

Aluminum Yarn in Hats

Stetson is marketing black and brown fedoras which twinkle from the aluminum yarn woven into the hats, according to Reynolds Metals Co. The black hats are flecked with silver Reymet, a Reynolds product, and the brown with gold-colored aluminum yarn. Introduced by Reynolds in 1957, Reymet staple was the first workable short metallic fiber.

NEW INTERCHEM POLYDYE COLORS

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For dyeing full, deep shades on polyester fibers, the new Polydye Series of Interchem Dyes are the first choice of many leading dyers. They are equally satisfactory for application by carrier dyeing techniques or by high-temperature methods in becks, jigs, or pressure dyeing equipment. Employed for self-shades or in combination with one another, Polydye Colors provide a wide range of popular shades with excellent fastness properties on polyester fibers.

Selected Interchem Polydye Colors are suitable also for dyeing certain other synthetics, such as acetate, triacetate, nylon, and acrylic fibers.

If you are not already using Interchem Polydye Colors, try them now. For further information on their properties and methods of application, write or phone the Color & Chemicals Division office nearest you.

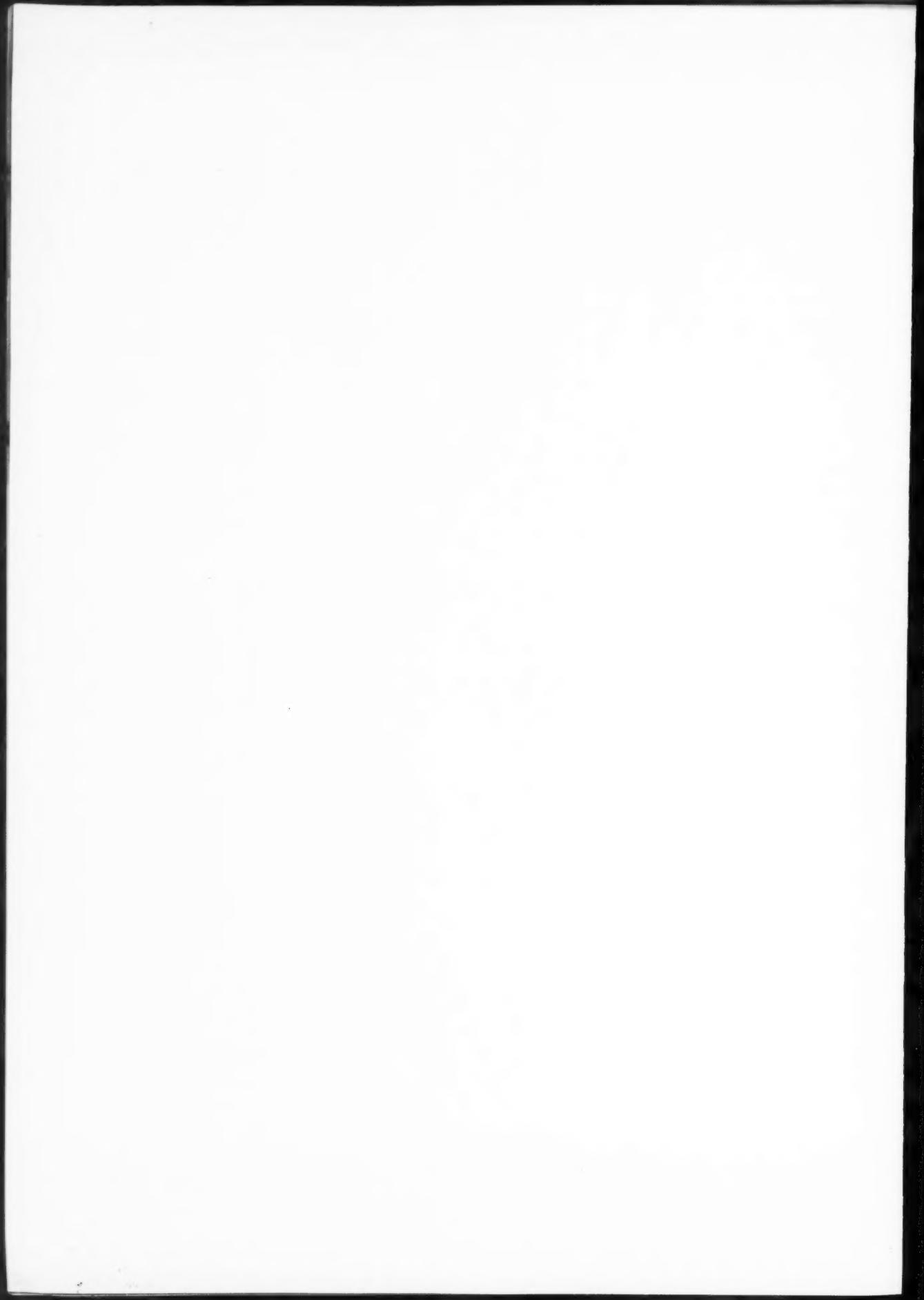
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THE TEXTILE



DISTRIBUTORS INSTITUTE, INC.

NEWS AND COMMENT

Increased Anticipation Rate Opposed

Converters in New York City last month expressed strong opposition to any increase in anticipation rates. One firm, Brookhaven Textiles, had announced that it was raising its anticipation rates to 7% a year from the prevailing 6% rate.

Opposition to the increase was based on the fact that prices for fabrics for the spring season have already been set based on the 6% rate. Operation in the trade, it was said, including costs of raw materials, were based on the 6% rate.

New Law on State Taxes

President Eisenhower's signature recently made into law an act of Congress (S.2524) curbing the authority of states to tax the income of interstate companies. The new law forbids such taxes if the sole business activities within the state for an out-of-state firm are solicitation of orders for sales of tangible personal property. The law, however, will not bar a state or its political subdivisions from imposing taxes on any firm incorporated under the laws of the state, or on any person who is a legal resident of the state.

Creslan Fashion Show Staged

A display of garments for men, women and children around which American Cyanamid Co. will build its fall promotion of Creslan acrylic fiber was staged recently in New York City. Shown in the fashion display were garments of 100% Creslan, and Creslan blended with wool, cotton, nylon and rayon.

Alden R. Loosli, general manager of the company's fibers division welcomed the guests and explained the company's program in textiles and chemicals. The scope of American Cyanamid's plans for promoting Creslan in consumer advertising media was described by Charles W. Rice, Jr., advertising manager of the fibers division.

Suit Protects Arnel Tags

A consent decree providing for the payment of damages and enjoining Katos Sportswear Co. from unlawfully using Celanese Corp.'s Arnel triacetate fiber trademarks, hang tags or imitations was entered recently in the Supreme Court of New York State.

The decree follows a temporary injunction granted earlier. Celanese had accused Katos of attaching Arnel hang tags to garments containing no Arnel fiber. A Celanese spokesman stated that the action was taken to uphold the integrity of the Arnel identification program.

Wullsleger Honored by Veterans

Arthur E. Wullsleger, veteran textile merchant, and chairman of the board of Wullsleger & Co., Inc., will be one of the four recipients of this year's achievement awards of the Textile Veterans Associa-

tion at a dinner on Oct. 7 at the Biltmore Hotel in New York City.

Others honored by the awards will be Dan B. Fuller, vice president of J. P. Stevens & Co., Inc.; Jack A. Goldfarb, president of Union Underwear Co.; and Benjamin P. Schoenfein, vice president of Bankers Trust Co.

Dinner-Dance November 5

The 21st annual dinner-dance of the Textile Distributors Institute will be held on November 5, at the Plaza Hotel in New York City, it was announced recently by George Greenspan, Cantor-Greenspan, Co., Inc., chairman of the dinner-dance committee. Held, as in past years, in the grand ballroom of the Plaza, the dinner-dance will be preceded by a reception, smorgasbord collation and cocktail hour. The cocktail hour will begin at 7 P. M. and dinner will be served at 8 P.M.

Specially engraved invitations by Tiffany will shortly be mailed announcing the event. The invitations will be printed on green bronze granite embossed note paper. Dancing at the dinner-dance will be to music of Mark Tower's orchestra conducted by Stuart Allen. As in past years, the attendance at the dinner-dance is expected to be at capacity of the ballroom.

Du Pont Expects Gains in '60s

Production, research and marketing objectives of Du Pont's textile fibers department for the coming decade were previewed by representatives of the textile industry recently at the Hotel Plaza in New York City.

More than 500 executives of textile mills and converters were present for the "look into the 60's."

The challenge facing the textile industry over the next 10 years, according to Ford B. Draper, general director of Du Pont's textile fibers sales, includes meeting the clothing needs of 50% more young adults and a 20% all-ages population increase, and diversifying wardrobes and home furnishings to accommodate heightened living standards and more leisure time of the average American family.

Andrew E. Buchanan, Jr., general manager of the department, recalled that Du Pont was well established in the rayon and acetate fiber business in 1939, when the company announced commercialization of nylon. In the 20 years that followed Orlon acrylic and Dacron polyester fibers were introduced and Du Pont's capacity to produce these three new fibers has expanded to nearly 600 million pounds per year.

Buchanan predicted that Du Pont research, already under way, would bring such advances as elastomer fiber yarns, variants of present Du Pont fibers with improved performance properties. He also held out hope for better dyeing and finishing methods, and new methods for designing more attractive and varied fabric textures.

Dean Lewis

(Continued from Page 34)

waiting to be dyed for drapery houses; 100% Dacron suitings; a broad range of Dacron-cotton fabrics for the womenswear trade; sturdy Dynel filter cloths for industrial uses waiting for heat-setting; Orlon industrial fabrics also in the plant for heat-setting; acetate dress fabrics, and huge quantities of acetate taffetas for shower curtains to be waterproofed on Colonial's special equipment; ecclesiastical fabrics to be dyed black; rolls of nylon cloths for finishing before being shipped to makers of nurses' and waitresses' uniforms.

To keep this wide diversity of goods moving through the plant, getting the high quality dyeing or finishing job that is the Colonial standard and then getting the goods shipped out on time is a big and exacting task of supervision for Dean Lewis. Colonial is still a small enough operation to permit the close personal on-the-spot management by Lewis, aided nowadays by his sons Dean, Jr., and Robert, who in recent years have come into the business with him. But Colonial is a big enough operation to make such close personal supervision an arduous and exacting task.

Thrives on Hard Work

But the day-in-and-day-out hard work that this supervision requires is meat and drink to him. He has been doing it all his long business career, and he is still ready, willing and able. It is his practice to rise in the morning when most of us are still in deep sleep. He leaves his home in Ridgewood, N. J., about 20 miles from his plant at six every morning, and drives down to the shop in time to get there before his workers. He is thus in the plant when the foreman and workers arrive and is able to see the day's work get underway in good order; give necessary instructions; and make needed decisions about the thousand and one details of operating a plant running so diverse a range of goods.

All morning he is in and out of the plant, conferring with his sons and with his head dyer, Tom Cassapula; conferring with his office staff; interviewing suppliers' salesmen; talking on the phone to customers.

Realistic Depreciation Asked

Robert Leeson, president of Universal Winding Co., criticized the current federal depreciation policy and its effect on small business when he appeared before a joint hearing of two sub-committees of the U. S.

Senate Select Committee on Small Business — the sub-committees on taxation and on government procurement — last July. The problem is the Treasury's concept of "useful life" for capital goods and Leeson argued that today's technological revolution has speeded obsolescence, making a new approach necessary. He stressed the particular importance to the small businessmen, many of whom are textile machinery companies and mills, of depreciation as a source of funds for capital improvement. Naming several remedies from which the experts could choose one, Leeson said: "If industry is to have the modern plant and equipment prerequisite to the growth of production, employment and standards of living in our country, it must be able to recover all cost of doing business, including depreciation, and have

By one o'clock, he is ready to leave to drive through the Lincoln Tunnel to New York, a matter of a few minutes when traffic is not congested. In the New York market, he spends a busy afternoon calling on customers and soliciting new business. Late in the day, he drives back to the plant for a check on how things are going, and to see that the second shift is proceeding smoothly. By 6:30 and often later, he leaves for home and a well-deserved evening of rest and relaxation. On Saturdays, too, he usually drives down to the plant for a few hours' work, before going off to play a little golf, his favorite means of getting fresh air and pleasant exercise.

A Grateful Man

All in all, this schedule, along with Lewis's selfless activities on behalf of his trade association and many community projects, add up to a strenuous life. But it is an enjoyable and satisfying one and Lewis is grateful for it. It has, he says, enabled him to make a comfortable living; to bring up his sons well and give them a good education; and provide enough to look forward to a secure old age for himself and Mrs. Lewis.

That his sons elected, without any pressure or undue persuasion on his part, to join him in the dyeing business is a matter of great satisfaction to Dean Lewis. Just as he has done well in a difficult and increasingly competitive business, he believes that his sons have a chance to do well, too.

In short, he believes that the small commission dyer operating close to the great textile marketing center of New York City, will always be able to do well if he is capable of handling a broad diversity of work and keeps his plant equipped with modern machinery and himself and his staff informed on new methods of dyeing. The secret of such a business, he believes, as it is exemplified by his own firm, is the personal touch.

"A dyeing business," he says, "is a service business like a diaper or wet wash laundry. You have to give your customers the specialized, attentive personal service they want. Here at Colonial we find it important to be in constant close touch with our customers. At a moment's notice, I or my boys are ready to hop over to New York and sit down with a customer and work out his problems or find a satisfactory solution to his complaint."

available to it an adequate source of funds. . . Action . . . is indispensable to the optimum rate of growth of industry."

Polyurethane Improvements

A new "one-shot" process for molding cushions of Polyurethane foam that is more economical than custom forming of crowned cushions and eliminates costly prepolymer processes is expected to increase the production of flexible Polyurethane foam in 1960, reported John W. Hull, product manager, Isocyanates, Allied Chemical's National Division.

Hull predicted an estimated 75 to 100 million pounds of flexible Polyurethane foam will be produced and sold in 1960, mostly to the furniture, bedding and automotive industries. He also noted these growth facts: approximately 50% of the furniture manufacturers now use Polyurethane foam, and the automotive industry has adopted it almost exclusively for topper pads.

Big gains expected for nonwovens despite tough marketing problems

PRODUCTION of nonwoven fabrics may reach a record 125 million pounds this year, *Chemical and Engineering News* estimates, on the basis of half-year production figures. The previous high was 110 million pounds in 1957. Ten years ago annual production of nonwovens was less than a million pounds.

New fibers, synthetic binding materials and improved webbing patterns, created by chemists and engineers, have established this new beachhead for the industry, which now hopes to invade some bordering market areas held by textiles and paper products. Many experts agree that total production could easily triple within three years if nonwovens could gain a place in wearing apparel, says the American Chemical Society weekly. The 10-million-pound slump in 1958 is not considered a trend because fall-off in production merely followed that of fabrics in general.

Nonwoven Uses Broaden

At the outset, a nonwoven fabric simply meant a cheap product made largely from low grade waste cotton fibers laid down in a web or continuous sheet and held together by low cost binders, such as starch, glue, and gums. Rug underlays are an example. Now the picture is changing in several ways.

Present advances into the clothing market have put an estimated ten million pounds of nonwovens—mostly as interlining—into ties, suits, dresses, foundation garments, quilted garments, handbags and shoes. Disposable and semidurable items such as wrap-around garments for laboratory and industrial use, party costumes and aprons are being made of nonwoven materials. Durable nonwoven skirts and dresses are on the market.

Researchers are working hard on technological improvements to give monwoven fabrics better drape and feel and increased durability to laundering and dry cleaning in the hope of gaining public acceptance for durable nonwoven outerwear. But the general use of disposable outer garments is not considered too promising in view of high tailoring and distribution costs.

Nonwoven home products such as draperies, curtains, ticking, covers, towels, polishing cloths and lampshades are catching on. Dental and medical applications are on the upswing. And shoe manufacturers are increasing their orders for nonwoven innersoles and interliners. Nonwovens are being used in cowboy hats, doll dresses, tea bags and diapers.

Regardless of whether nonwoven fabrics move in on markets for apparel or paper products, consumption will increase this year. The biggest immediate potential is in industrial applications, where observers predict a demand for 70 million pounds in 1959. Uses

include automobile quilting and padding applications, backing for plastic sheeting, laminates, filters, wiping clothes, insulation, bags and packaging materials.

About 60% of the fibers now used in nonwoven materials are synthetics, some of them self-binding types. About 30 million pounds of rayon and about 12 million pounds of acetate and waste nylon fibers were used last year.

In addition to the old binders, such as starch, gums and casein, synthetic resin binders and rubber and plastic latexes are now used. Cotton Christmas tree "snow" contains less than 10% binder, while shoe innersoles are made with three times as much binder as fiber. About 28 million pounds of binders and two million pounds of thickeners, plasticizers, pigments, wetting agents, fillers and chemical agents for resistance to fire and water are used in a year.

Many of the problems hampering production growth of nonwovens fall into the laps of the chemist and the engineer, the magazine comments, but these problems are being solved by research.

"Before nonwovens could succeed in certain markets, particularly in apparel areas, they needed new and improved properties like resiliency, crease resistance, drapability, hand and good wet and dry cleaning performance," *Chemical and Engineering News* points out.

New Latex Binders

This need ushered in new types of latex binders. Butadiene-styrene types led the way but were badly handicapped by poor stability to light and poor wet and dry cleaning properties. Producers quickly moved on to butadiene-acrylonitrile latexes.

"But here they found crosses to bear, too. Nonwovens containing butadiene-styrene binders often discolor and give off odors when they age. Moreover, some binder migrates to the surface during bonding to leave the fabric weak in the center and prone to delaminate. While binder suppliers have done much to remedy odor and lightfastness problems, migration remains a big headache."

"Now, attention is swinging to acrylate binders. Acrylic esters, which really didn't get off the ground until last year, are making a strong bid for nonwoven markets. While these binders are not as elastic as butadiene-acrylonitrile types, they have good color and odor stability."

There are problems at the merchandising level also. The marketing is rough, says the magazine, adding: "The textile industry is notorious for its fiercely competitive business practices, and its newest offspring, nonwovens, seems to have inherited most of the bad traits." ■

Compressed Air

has many mill uses

COMPRESSED AIR can be helpful in the textile mill by increasing production and lowering costs because of its ease of installation and operation; flexibility; speed; low initial and operating costs, and safety. Its uses in producing textiles include conveying, cleaning, machine feeding, agitating, operation of mangles and other machines, testing, singeing, drying, bleaching, dyeing, and the operation of pneumatic controls to regulate a process variable (temperature, humidity, etc.).

Possibly of greatest importance is the low cost of compressed-air power. An analysis of the cost for a pneumatic device or system will demonstrate that it is low when compared to the cost of the operator's wages (the air to operate a heavy-duty item costs less than 10 cents per hour, an insignificant figure when compared with the operator's hourly wage).

An estimate of the time required for a device to pay for itself may be obtained from the following formula:

$$\text{Weeks to Repay} = \frac{\text{Cost of Tool}}{\text{Savings per Week}}$$

Assuming a 40-hour week, device cost of \$500, labor and overhead costs of \$6 per hour, and a savings of 10%:

$$\frac{500}{\$6 \times 40 \times 10\%} \quad \text{or about 20 weeks.}$$

Mangles

A pneumatic mangle designed for use with many types of fabrics can be built with a variety of combinations of batchers, tubs, compensators, immersion rolls, drives, and folders to meet textile mill requirements. The loading system may consist of a tube inflated by compressed air that presses against a steel plate bearing against brackets on pressure rolls. In the extraction process, and running both 10 and 3-ounce fabrics side by side through the mangle, the same degree of extraction on each fabric may be obtained. Mercerizing can be accomplished with uniform saturation, even on wet fabrics. In the application of dyes and resin, the former are distributed uniformly and the latter penetrate deeply into the fibers of the fabric.

Miscellaneous Operations

In addition to tasks indirectly associated with mill operation (such as pneumatic-tube conveying, opening and closing doors, plant and vehicle maintenance, etc.), compressed air may be used to insure high standards of quality by testing fabric tensile strength. Because it can be precisely controlled, compressed air is ideal for accurate testing. Air may also be used to agitate liquids, as in dye vats. In most installations, the compressed-air line is laid along the bottom of the tank; the pipe's lower side is perforated at intervals to provide for entry of air into the tank. After air

is admitted to the line, it escapes through the orifices and agitates the liquid in the tank as it rises to the surface.

Process Control

Automatic processes offer one of the most promising fields for the use of compressed air. Many leading manufacturers believe that control is the key to increased productivity, resulting in more and better goods at lower cost. New processing techniques that utilize compressed air's best qualities are being developed by an increasing number of industries to speed production and lower costs and to insure greater uniformity in products of higher quality, a typical application in a textile mill being the control of temperature in a dye vat.

The air-operated devices used in the control of temperature are the following: sensing element (to measure the system variable, temperature), indicator (to provide an instantaneous, or temporary, visual reading of the variable's change), recorder (to provide a permanent, graphic reading of the variable's changes over an extended period of time), and the controller (to exercise command over the process).

Modern process control usually requires that indicating, recording, and control devices be located at centralized points—usually called "control stations." Since the process equipment may be located at a distance from the stations, a reliable and effective means of communication between process point and control station is needed. Compressed air fills this communications need. It is simple; its installation and maintenance costs are low; and it is safe to use in hazardous areas. In addition, pneumatic transmission is accurate (because of its inherent simplicity) and flexible (it is adaptable to the measurement of a fluctuating variable such as temperature).

Pneumatically-operated recorders and indicators are of special value to industrial processes because they provide both a history of a measured variable and its status at any given time. These data are valuable in studying process efficiency, duplicating previous optimum operations, correcting undesirable conditions, planning future processes, and taking preventive—rather than corrective—measures in preventing a system upset.

New Litzler Expansion

The Ovens for Industry Division of Ryan Industries, Inc., has been acquired by C. A. Litzler Co., Inc., to broaden its line of continuous processing equipment involving heat transfer to cure and treat synthetic filament webs, coated metals and plastic materials. Dwight M. Wilkinson, founder of the Oven Division and executive vice president of Ryan Industries, is now associated with the Litzler organization as vice president in charge of sales.

Low Denier Polypropylene

Reeves Brothers reports it has begun commercial production of low-denier polypropylene fiber. President John E. Reeves believes his firm is the first in the field. The new fiber is available as a staple and in continuous multi-filament yarns. Gages of individual filaments range from 3 to 22 denier and yarns can be supplied in a range of deniers to meet specific end uses. The low-denier polypropylene is expected to have wider industrial uses, including textile applications, than large-diameter polypropylene monofilaments, which Reeves was also first to produce commercially, last year.

PROUD MOMENT—Inspecting yarn, staple fiber and fabric made of Reeves' new low-denier polypropylene are (left to right) Dr. Victor L. Erlich, vice president for research; John E. Reeves, president, and John H. Karrh, manager of Reeves plastics division.



IRC Carpet Test

Industrial Rayon Corp., recently concluded a wear test program for carpets made with its nylon as well as carpets made with other fibers. The test was made by installing the tested carpets on the steps of the Union Terminal of the Cleveland, Ohio, transit system. As many as 20 million footsteps were made on the carpet during the 15 months of the test.

To give all carpet the identical pedestrian traffic, first the entire stairway was laid, then the carpet was cut for insertion of various test fabrics on the wear-point of the stairs. Carpet fabrics of 100% manmade and natural fibers as well as blends in all type of constructions were included.

According to Charles E. Rodgers, Jr., sales manager of IRC's Nylon Division: "The over-all scope and intensity of this actual wear test program provides extremely valuable data about the performance characteristics of a broad range of fibers and fabrics."

Commemorative Stamp Asked

A special stamp issued to commemorate the American Textile Machinery Exhibition International, to be held May 23-27, 1960 in Atlantic City, has been requested in a letter to Postmaster General Arthur E. Summerfield signed by 48 senators representing states in which textiles and textile machinery are produced. The letter pointed out the significance of the exhibition as the first international textile machinery exhibition held in this country and the largest showing of textile machinery ever held anywhere. More than 400 companies expected to participate.

More Celanese Chemicals

Celanese Corp.'s acetic acid facility at Pampa, Texas now has a capacity of 240 million pounds a year for the two acetyl chemicals, acetic acid and acetaldehyde. This doubling of its previous capacity represents another step in an expansion program necessitated by increased customers' demands beyond supply, president Richard W. KixMiller explained.

The new facilities will not only allow increased production of acetic acid and its derivatives for the end uses already popular, but also will make additional acetic acid available for greater output of the newer Celanese chemicals, trimethylolpropane and the acrylate ester group, KixMiller added.

View of Celanese Corp's enlarged acetic acid plant at Pampa, Texas.

Labeling Now Under Way

The apparel industry is responding to pressure from stores to initiate early labeling programs in accordance with the requirements of the new Textile Fiber Products Identification Act, Harvey H. Hannah, chief of the FTC's division of textile and fur identification, reported. He cited as evidence the large backlog of applications for registered numbers under the act. The FTC started issuing numbers in July.

The advance preparation, Hannah pointed out, has been stimulated by fear that by next March, when the Act goes into effect, any unlabeled merchandise in stores would look like old goods to the consumer who will be looking for the labels. Hannah recommended that businessmen use the FTC rules issued on June 2nd to guide them on all questions of labeling fiber products, since the new rules take precedence over previous ones.



The A.A.T.C.C. ACCELEROTOR® the official testing machine for

Abrasion Resistance of Fabrics / A.A.T.C.C.
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Excellent correlation and reproducibility has been demonstrated with this machine



The Accelerotor now has the official status of being specified in the above two test methods. It is also equally useful in producing other types of abrasion such as edge wear, and cooperative work is now in progress on additional methods calling for its use.

Employing new principles of random motion of an unfettered sample it is not subject to the limitations imposed by all other types of abrasion machines which employ a fixed or rigidly mounted sample.

The combined action of flexing, rubbing, scuffing, shock, compression, stretching and abrasion of fiber against fiber as well as against various abradents produces results which bear a close and realistic relationship with actual end-use wear. Both the reproducibility and repeatability of test results are of a very high order.

The Accelerotor is extremely versatile and may be used on all types of fabrics and fiber combinations. The type of results produced permit evaluation by a number of methods which include changes in weight, strength, air permeability, light transmission, visual appearance, hand, etc.

Write for Accelerotor catalog.



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For the DYER

and FINISHER

New Antistatic Agent

Aston AP, a new, antistatic agent, is now being marketed by Onyx Oil & Chemical Co. The cationic polyamine agent is said to afford efficient non-durable protection against static charge formation, and at the same time, provide a soft hand on fabrics. The agent is 100% active, and exhibits ease of solubility in water, together with a wide range of organic solvents. The chemical characteristics suggest the agent's versatility in many textile and industrial antistatic applications. For further information and samples write the editors.

New Vinyl Latex

Dow has developed a new vinyl copolymer latex for use in many textile coating applications. Designated Experimental Latex X-2726, the product has shown its heat stability to be 50% better than commercial vinyl chloride type latexes previously available. The new Dow latex is said to have broad compatibility with plasticizers and other film forming latexes, and may be fused at lower heat than competitive unplasticized latexes. Applications for which the new product shows promise are coatings for shade cloth, wallboard, book fabrics, fabric wall covering, etc. For further information write the editors.

Finish for Cotton Blends

Endura-Set, intended especially for the lingerie trade, is a new finish for cotton and synthetic blends developed by Dodgeville Finishing Co. The finish is said to impart a feeling of smoothness and silkiness to nylon-Dacron-cotton blended fabrics. The treatment is applied to the textile under relaxed conditions. Residual shrinkage is rated under 2%. For further information write the editors.

Azoics in Production

Pfister Chemical is now producing advanced neutral developing azoics which can be aged in neutral steam with full color yield. They are suitable for printing with vats, directs and oxidation blacks. Pfister azoics provide good light fastness, good fastness to washing and chlorine, and are said to offer outstanding bleed resistance during soaping off operations. Primarily for use on cotton or rayon, the new azoics can also be applied on acetate or silk. For further information write the editors.

Textile Processing Wax

Sonowax 3450, a new, chemically-reacted, microcrystalline wax for use in textile wet processing, has been developed by the Textile Chemicals Division of L. Sonneborn Sons, Inc. The wax, a nonionic antistatic material, is compatible with commercial resins and catalysts, and is stable to acids, alkalis and salts. When used in production of wash-and-wear and crease-resistant cotton and synthetic fabrics, the wax is said to increase tear strength, abrasion resistance and crease recovery. It also serves as softener and plasticizer for starches and various types of warp sizes. *For further information write the editors.*

Levelling Agent

Verona Dyestuffs recommends its levelling agent, Avolan IW, for dyeing wool with neutral dyeing pre-metallized dyestuffs, such as its own Isolans. Avolan IW permits dyeing at a pH below 5, which is close to the iso-electric point, and insures a minimum effect on the wool fiber. The use of Avolan IW does not decrease the fastness properties of the neutral dyeing pre-metallized dyestuffs, the company adds. *For further information write the editors.*

New Vat Dyestuff

Indanthrene Corinth B Infra Paste, a new vat dyestuff being manufactured as a straight product for the first time, is described in an eight-page circular published by the makers, General Dyestuff Company, a sales division of General Aniline & Film Corp. The circular contains color swatches of vat dyed cotton and rayon. *For a copy write the editors.*

Data on Solvents

Properties and uses of Cello-solve and Carbitol glycol-ether solvents are described in a 40-page booklet published by the Union Carbide Chemicals Co. Fourteen glycol-ether solvents, their physical properties, chemical derivatives, end-use possibilities, storage and handling, physiological properties, specification limits and test methods are covered. *For a copy write the editors.*

Low Formaldehyde Resin

Crown Chemical Corp. has introduced C-TRON a new thermosetting resin that is low in formaldehyde content. Not only does it answer the formaldehyde odor problem, but also, according to Crown, it imparts high quality crease and shrink resistance to natural and synthetic fabrics and has enabled some finishers to eliminate the afterwash process. *For further information write the editors.*

What Walhard HARD CHROMIUM Plating Means To You

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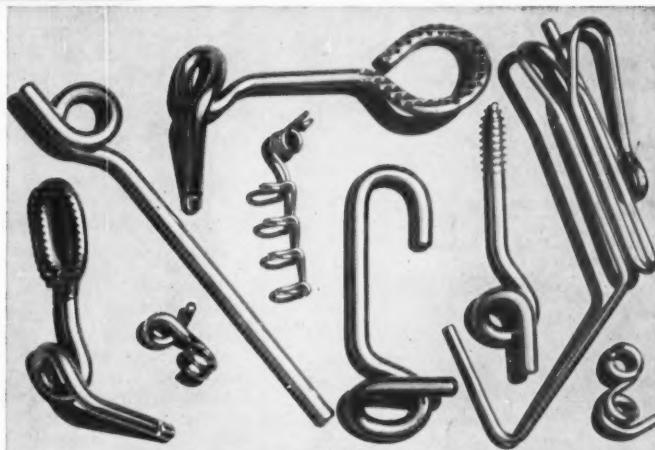
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79 NORTH AVENUE — ATTLEBORO, MASSACHUSETTS



"THIS LUBRICANT CUT OUR LUBRICATION COSTS IN HALF"

says PHILADELPHIA QUILTING CO.

"Trouble from conventional greases floating off hot shafts of our quilting machines caused us to try a LUBRIPLATE Lubricant. It proved so satisfactory that we are now using it as an 'all-purpose' grease throughout our plant. We feel that LUBRIPLATE is saving us 50% in lubrication costs."

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Chief Maintenance Engineer

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For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" ... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.



TEXTILE NEWS BRIEFS

Nopco Foreign Promotions

Dr. John E. Wards has been appointed resident manager of Nopco Chimie S. A., Fribourg, Switzerland, it was announced by Dr. E. A. Robinson, vice president, laboratory research and development and foreign sales for Nopco Chemical's industrial division. A. Howard Stuewe was named to succeed Dr. Ward as technical manager of Nopco's foreign department-industrial.

National Appoints Hayes

National Drying Machinery Co. has appointed Hayes Textiles, Inc., of Spartanburg, S. C., as southern agent for sales of National loop, tenter, roll, piece goods, skein, heat setting, curing and other drying and conditioning equipment.

Unifil Shipments Climbing

Universal Winding Co. expects to be installing Unifil loom winders at the rate of 2,000 a month, Robert Leeson, president, has reported. This is the peak installation rate toward which the company has targeted its operations since the later part of 1958. Leeson noted that the company has a \$10 million backlog of orders.

Among the recent purchasers of Unifil Winders are Greenwood Mills, Pepperton Cotton Mills, and Frank Ix and Sons. Up to the present time, 64 companies have ordered Unifil Loom Winders for installation in 94 different plants.

Unifil-equipped looms are being used to weave a variety of materials. Included in the list are: drills, twills, sateens, taffetas, shirtings, satins, gabardines, denims, terry towelling, cotton and rayon fabrics, Jacquard fabrics, osnaburgs, marquisettes, draperies, and tire-cord fabrics.

Nonwoven Fabric Appraisal

Nine recent graduates of the Harvard Business School are authors of a report on the nonwoven fabrics and related industries, "Nonwoven Fabrics—An Unbiased Appraisal." Eight months were spent in preparation of this report, originally prepared as part of the requirements for the authors' M.B.A. degrees. The report, available at \$15 a copy is a comprehensive study of fabrics produced through bonding individual fibers together by chemical, mechanical, or thermal means, without the need for yarn interlacings. It is designed to present an objective preview of the potential prob-

lems and opportunities for this field in the future. To obtain copies write the editors, but do not send payment.

New Textile Fiber Book

"The Handbook of Textile Fibers," by Dr. J. Gordon Cook, has been published by Merrow Publishing Co. Ltd., 276 Hempstead Road, Watford, Herts, England. The book provides condensed and authoritative information on all classes of textile fibers, natural and manmade, in use throughout the world today. It should prove to be a ready reference book for all engaged in the textile trade and it also should find use as a text book by all students intent on entering any branch of the textile industry. The book has approximately 300 pages and is priced at \$2.50 including postage. Dr. Cook spent many years as a fiber research chemist with Imperial Chemical Industries Ltd. After working on nylon and other polyamide fibers, he took part in early research work on polyester fibers and helped develop the synthetic fiber Terylene. Copies may be ordered directly from the publisher.

Du Pont 501 Licensees

Three additional mills have been licensed since September 1st to manufacture carpet of Du Pont 501 continuous filament carpet nylon, in accordance with specifications of Du Pont's labeling program. The mills are: Bigelow-Sanford, Cabin Crafts and Callaway. Styles in loop and cut pile constructions are expected to be available to retailers early this fall.

Stevens to Speak

Robert T. Stevens, president of J. P. Stevens & Co. will be the guest speaker at the luncheon of The Textile Salesmen's Association, Inc., Thursday, October 15th, at the Statler Hilton Hotel, New York. Tickets may be obtained from the Association at 22 E. 38 St., New York 16.

Bonding Polyesters to Rubber

A new system of bonding polyester fiber to rubber was announced by Canadian Industries Ltd., manufacturers of Terylene polyester fiber. The new system is said to achieve economy and efficiency. Terylene cords in tires is the chief application looked to. Others are industrial V-belts, automobile fan belts, and conveyor belting.

Celanese House Completed

The Celanese House, designed for Celanese Corporation by architect Edward Stone, represents a synthesis of structural materials and home furnishings that use the

(Continued on Page 77)

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in September 1959. All prices are given as subject to change without notice.

CELLULOSIC YARNS ACETATE

American Viscose Corp.

Current Prices

Effective March 13, 1959

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4 & 6-Lb. Tubes	Twister Tubes	Warp	Spinning Cones	Twist Warps
40/11	....	....	....	....	\$1.14
45/11	....	....	....	....	1.03
55/14	\$.99	\$.97	\$1.00	....	.87
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/41	.74	.73	.75	.69	.70
200/54	.70	.69	.71	.66	.67
300/80	.66	.65	.67	.62	.63

* Standard Twist 2¢ Additional.

Terms: Net 30 Days.

Celanese Corp. of America

Current Prices

Effective March 10, 1959

Bright & Dull

Denier and Filaments	Intermediate Twist			Spinning Twist		
	4 & 6-Lb. Cones	4-Pound Beams	Cones	Beams	Tubes	O Twist
45/13	\$1.12	\$1.13	\$.96	\$.89	.90	.79
75/20	.95	.96	....	.89	.90	.79
75/50	.97	.98	....	.92	.94	....
100/26-40	.91	.92	....	.85	.86	.77
120/40	.82	.83	....	.76	.77	....
150/40	.74	.75	.74	.69	.70	.66
200/52	.70	.71	....	.66	.67	....
300/80	.66	.67	....	.62	.63	.60
450/120	.66	.67	....	.62	.63	....
600/160	.65	.66	....	....	....	....
900/80-240	.63	.64	....	....	....	.61
150 Denier 12-TM Tubes	....	.73	....	....	....	....
2-Pound Cheeses	....	....	.01 Less Than 4-Pound Cheeses	....	....	....
2-BU and 4-BU Tubes	....	....	....	....	....	Same Price as 4 and 6-Lb. Cones
Prices subject to change without notice.	....	....	....	....	....	....
All previous prices withdrawn.	....	....	....	....	....	....
Prices on unlisted items can be obtained upon request.	....	....	....	....	....	....
Orders are subject to conditions of sale appearing on our acknowledgements of orders.	....	....	....	....	....	....

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist		Spinning Twist	
	4 & 6-Lb. Cones	Beams	Cones	Beams
55/15	\$1.37	\$1.38	\$1.31	\$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

Celaperm Black Yarn Prices

Effective March 11, 1959

Denier and Filaments	4 & 6-Lb.		Intermediate Twist		Spinning Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/15	\$1.17	\$1.18	\$1.11	\$1.12	....	....
75/20	1.14	1.15	1.08	1.09	....	....
100/26	1.08	1.09	1.02	1.03	....	....
120/40	.99	1.00	.93	.94	....	....
150/40	.91	.92	.86	.87	....	....
200/52	.85	.86	.81	.82	....	....
300/80	.81	.82	.77	.78	....	....
450/120	.79	.80	.75	.76	....	....
600/160	.77	.78	....	....	....	....
900/80	.74	....	....	....	....	....

3 to 5 Turns on Cones or Beams — \$0.02 Additional

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgements of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Zero Twist Low Twist Intermediate Twist

Denier & Filament	Tubes	Beams	Cones	Beams	2 & 4 Lb. 4 & 6 Lb. Tubes	Cones	Beams
40-13	\$1.06	\$1.13	\$1.11	....	....	....	....
45-13	.94	1.02	.91	....	....	....	....
55-18	.82	.86	.91	....	....	....	....
55-24	.82	.86	.91	....	....	....	....
75-24	.79	.89	.90	....	....	....	....
75-50	....	....	.92	.95	.97	.98	....
100-32	.77	.85	.86	.89	.91	.91	....
120-50	.73	.76	.77	.81	.82	.83	....
150-40	.66	.69	.69	.74	.74	.75	....
200-60/84	.65	....	.66	.70	.70	.71	....
240-80	....	....	.67	....	....	.71	....
300-80	.60	.62	.62	.66	.66	.67	....
450-120	.61	....	.62	.63	.66	.67	....
600-160	....	....	....	....	.65	.66	....
900-44	....	....	....	....	.63	.64	....
900-240	.61	....	....	....	.61	.62	....
1800-88	....	....	....	....	.61	.62	....
2700-132	....	....	....	....	.61	.62	....
3000-210	....	....	....	....	.61	.62	....

(A) Regular Twist (2.9 and 5 T.P.I.)—add \$.02 to Intermediate Twist Price.

(B) 1 lb. 4" Tubes—add \$.02 to 2 & 4 lb. 4" Tube Price.

Color-Sealed

Denier & Filament	Tubes	Beams	Cones	Beams	2 Lb. 4 & 6 Lb. Tw. Tubs.	Cones	Beams
55-18	\$1.245	\$1.315	\$1.32	\$1.35	\$1.35	\$1.37	\$1.38
75-24	1.18	1.28	1.29	1.32	1.32	1.34	1.35
100-32	1.14	1.24	1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.07	1.10	1.11	1.11	1.12
200-64	1.00	1.06	1.06	1.04	1.05	1.05	1.06
300-80	.95	.97	.96	1.00	1.01	1.01	1.02

(A) Regular Twist—Add \$.02 to Intermediate Twist Price.

(B) 1 lb. 4" Tubes—add \$.02 to 2 & 4 lb. 4" Tube Price.

Black

Denier & Filament	Tubes	Beams	Cones	Beams	2 & 4 Lb. 4 & 6 Lb. Tubes	Cones	Beams
55-18	\$1.045	\$1.115	\$1.12	\$1.15	\$1.17	\$1.18	....
75-24	.98	1.08	1.09	1.12	1.14	1.15	....
100-32	.94	1.03	1.03	1.06	1.08	1.09	....
150-40	.83	.86	.86	.87	.89	.91	.92
200-60	.83	....	.81	.82	.85	.86	....
300-80	.75	.77	.77	.81	.81	.81	.82
450-120	....	....	.76	.79	.79	.79	.80
600-160	....	....	.74	.77	.77	.77	.78
900-240, 44	....	....	.74	.74	.74	.74	.75

Specialty Yarns

Same Price as Regular Yarn

Same Price as Regular Yarn

Thick & Thin

Denier & Filament	Natural	Black	Color-Sealed	
Cones	Beams	Cones	Beams	
100-22 Int. Twist	\$1.34	\$1.35	\$1.47	\$1.48
200-64 Int. Twist	1.05	1.15	1.15	1.35
200-64 Reg. Twist	1.08	1.09	1.17	1.21

Terms: Net 30 days. Subject to changes without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective March 13, 1959

"Estron"** Yarn, Bright or Dull — White

Regular Twist	Intermediate Twist	Low Twist	Zero Twist	Tricot Beams
Cones	Beams	Cones	Beams	Cones
55/13	\$1.01	\$1.02	\$0.99	\$1.00
55/13	\$1.01	\$1.02	\$0.99	\$0.94
75/19	.97	.98	.95	.96
75/49	.99	1.00	.97	.98
100/25	.93	.94	.91	.92
120/30	.84	.85	.82	.83
150/38	.76	.77	.74	.75
200/50	.72	.73	.70	.71
300/75	.68	.69	.66	.67
450/114	.68	.69	.66	.67
600/156	.67	.68	.65	.66
900/230	.65	.66	.63	.64
Heavier	....	....	....	.56

Current Prices—December 19, 1955

"Chromspun"**—Standard Colors (Except Black)

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist		Code	Den/Fil.	Turned Cones	Turned Beams	Price
	Cones	Beams	Cones	Beams	Cones	Beams					
55/13	\$1.39	\$1.40	\$1.37	\$1.38	\$1.31	\$1.32	9669	150/148	2 1/2	2 1/2	\$1.35
75/19	1.36	1.37	1.34	1.35	1.28	1.29	9769	300/224	2 1/2	2 1/2	1.25
100/25	1.30	1.31	1.28	1.29	1.22	1.23	9782	450/270	2 1/2	2 1/2	1.05
150/38	...	...	1.11	1.12	1.06	1.07	9809	600/360	2 1/2	2 1/2	1.05
300/75	...	...	1.01	1.02	.97	.98	9840	900/450	2 1/2	2 1/2	1.00
450/114	...	...	.99	1.00	.95	.96	9924	2000/744	2 1/2	2 1/2	.85
900/230	...	...	.94	.95	...	...			

Current Prices

"Chromspun"**—Black

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist		Code	Den/Fil.	Turned Cones	Turned Beams	Price
	Cones	Beams	Cones	Beams	Cones	Beams					
55/13	\$1.19	\$1.17	\$1.18	\$1.12	...	...	9669	150/148	2 1/2	2 1/2	\$1.35
75/19	1.16	1.14	1.15	1.09	...	...	9769	300/224	2 1/2	2 1/2	1.25
100/25	1.10	1.08	1.09	1.03	...	...	9782	450/270	2 1/2	2 1/2	1.05
150/38	.93	.91	.92	.87	...	...	9809	600/360	2 1/2	2 1/2	1.05
200/50	.87	.85	.86	.82	...	...	9840	900/450	2 1/2	2 1/2	1.00
300/75	.83	.81	.82	.78	...	...	9924	2000/744	2 1/2	2 1/2	.85
450/114	.81	.79	.80	.76	...	...			
900/230	.76	.74	.75	...	...	...		

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" is a trade-mark of the Eastman Kodak Company.

** Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil.	Skeins	Turned* Skeins & Cones	High Turn Skins & Cones			Den/Fil.	Turns	Turns	Turns	Turns	Turns
			No Turn Skeins	5 Turn Skeins	12 Turn Skeins						
40/30	\$1.49	\$1.95	...	...	...	40/30	...	...	...	...	...
50/36	1.29	1.55	...	...	...	50/36	...	...	...	...	...
65/45	1.22	1.38	...	...	...	65/45	...	...	...	...	...
76/60**	1.11	1.25	...	...	...	76/60**	...	...	...	...	...
100/74**	1.02	1.15	...	...	...	100/74**	...	...	...	...	...
125/60	1.01	1.12	\$1.16	1.37	...	125/60	...	...	...	...	...
150/120	.99	1.08	1.18	1.33	...	150/120	...	...	...	...	...
300/225	...	1.01	...	...	1.14	300/225	...	...	...	...	...
900/372	...	.91	...	...	...	900/372	...	...	...	...	...
1800/744	...	.91	...	...	...	1800/744	...	...	...	...	...

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil.	Tubes	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns
40/30	\$1.35	\$1.35	...	...	...	...	...	...	...	...	...
50/36	1.05	1.05	...	...	...	...	...	...	...	...	...
65/45	1.13	1.15	...	...	...	...	...	...	...	...	...
75/45*	1.04	1.15	\$1.15	\$1.15	\$1.38	1.38	1.38	\$1.46	...	...	...
100/60*	.96	1.10	1.10	1.30	1.30	1.30	1.30	1.38	...	...	...
125/60	.91	1.06	1.06	1.21	1.21	1.21	1.21	1.30	...	...	...
150/90*	.83	.87	.87	1.21	1.21	1.21	1.21	1.30	...	...	...
150/120	.87	.99	...	...	...	...	...	...	...	...	...

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil.	Tubes	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns	Turns
50/36	\$1.60	\$1.85	\$1.85	...	...	...	...	...	...	...	...
75/45	1.48	1.58	1.58	1.78	1.88	...	...	...	...	...	...
100/60	1.38	1.48	1.48	1.68	1.78	...	...	...	...	...	...
150/90	1.21	1.28	1.28	1.63	1.73	...	...	...	...	...	...
300/120	1.21	1.28	1.28	1.63	1.73	...	...	...	...	...	...

Nub-Lite (Short Nubbi)

Code	Den/Fil.	Cones	2 1/2 Turn Natural			Den/Fil.	Turns	Turns	Turns	Turns	Turns
			2 1/2 Turn Natural Cones	2 1/2 Turn Natural Cones*	5 Turn Natural Cones*						
1515	160/90	...	...	...	\$1.50	1515	...	...	...	...	...
1519**	155/90	...	...	...	1.40	1519**	...	...	...	...	...
2008	200/120	...	...	...	1.50	2008	...	...	...	...	...
3002	315/180	\$1.15	\$1.05	...	...	3002	...	...	...	...	...
4011	410/224	1.15	1.05	...	...	4011	...	...	...	...	...
6001	600/360	1.13	1.03	...	...	6001	...	...	...	...	...
8001	860/450	1.13	1.03	...	...	8001	...	...	...	...	...

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1519 can be run in warp or filling.

CUPIONI Type B

Code	Den/Fil.	Cones	3 1/2 Turn Natural			Den/Fil.	Turns	Turns	Turns	Turns	Turns
			3 1/2 Turn Natural Cones	3 1/2 Turn Natural Beams	3 1/2 Turn Natural Cones*						
9747	275/225	...	3 1/2	...	\$1.25	9747	...	...	...	...	...
9798	450/372	...	2 1/2	...	1.15	9798	...	...	...	...	...
9823	600/372	...	2 1/2	...	1.10	9823	...	...	...	...	...
9847	960/372	...	2 1/2	...	1.02	9847	...	...	...	...	...
9885	1290/372	...	1 1/2	...	1.00	9885	...	...	...	...	...
9934	2680/744	...	1 1/2	...	1.00	9934	...	...	...	...	...

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil.	Turned Cones	Turned Beams	Price
9669	150/148	2 1/2	2 1/2	\$1.35
9769	300/224	2 1/2	2 1/2	1.25
9782	450/270	2 1/2	2 1/2	1.05
9809	600/360	2 1/2	2 1/2	1.05
9840	900/450	2 1/2	2 1/2	1.00
9924	2000/744	2 1/2	2 1/2	.85

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices

Effective June 29, 1959

Standard Quality Yarns

NATURAL

Weaving Skeins Knitting

Den/Fil.	Tenacity	Turns	Cones	Beams	Colors
100/40	Regular	2.5S	\$1.35	\$1.3	

ATMA

Parade of Progress

American Textile Machinery Exhibition - International

May 23-27, 1960

Cotton Stretch Yarns Researched

A new research project on how to produce permanently elastic cotton yarns suitable for making socks and other knitwear has been set up by the U.S. Department of Agriculture. Various methods of producing twisted, crimped, looped or otherwise distorted yarns, then fixing the distortions for durability by chemical treatment will be tried. Several different textile finishing compounds will be tested. Treated yarns will be evaluated for their knitting quality and for durability of the elasticity. The work is to be done by the Clemson Agricultural College, Clemson, S. C., under a contract negotiated for the USDA by the Southern Utilization Research and Development Division at New Orleans.

(Continued from Page 74)

company's chemicals and plastics. Its fabrics and floor coverings are selected from The American Idea collection, designed by John and Earline Brice for Celanese's fall 1959 promotion of home furnishings. Features of the house include an inner court with a sunken pool; sliding glass doors; glass-tipped ceilings from which are suspended hanging gardens.

United Leases New Plant

The United Piece Dye Works has signed a long term lease for a new plant in Bluefield, Va., where development work on currently processed fabrics and on new fibers and fabrics will be conducted. Operations are expected to start sometime in 1960, using machinery reserved from liquidation of the company's Lodi, N. J. plant.

Seat Cover Group Elects

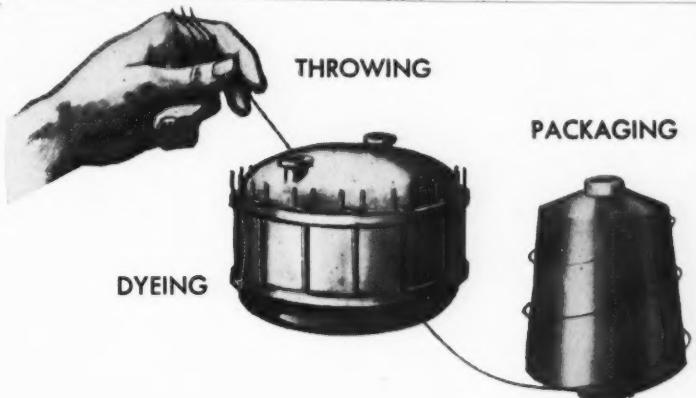
J. W. Whaley, executive vice president of the Crawford Manufacturing Co., Richmond, Va., was elected president of the Automobile Seat Cover Association of America, at the Association's annual meeting. Also elected were Jack Posnonsky, first vice president; Morton Steinberg, Saul Trachtenberg, William Sims, and D. B. Pitman, vice presidents; M. M. Gordon, secretary and Vernon Volland treasurer. Volland also will continue as executive director.

Vinal Name Adopted

"Vinal" is the generic term adopted by Air Reduction Co. to identify fibers of polyvinyl alcohol marketed by its Airco Fiber Department. These fibers, which have been used extensively in Japan, have been known abroad as "vinylon."

Stevens Modernization

The industrial plant of J. P. Stevens & Co., Rock Hill, S. C. recently purchased from Saco-Lowell Shops 10 Model FS-2 Roving Frames, as part of a continuous modernization program.



PRESSURE DYEING OF DACRON

yarns on the latest high pressure equipment provides you with level dyed, fast color yarns of unsurpassed beauty.

Our "Complete Package" service assures rapid delivery of natural or dyed **DACRON**, **NYLON**, or **RAYON** filament yarn, in one order for a single charge.



Belgrade and Ontario Streets, Philadelphia 34, Pa.
REgent 9-5256

SALES REPRESENTATIVES: Shannonhouse & Wetzell, Johnston Building, Charlotte, N.C.; Carl L. Miller and Sons, Utica, N.Y.; R.C. Osborne & Co., Broad St. and Allegheny Ave., Philadelphia 32, Pa.; The Tillinghast-Stiles Co., 327 South LaSalle Street, Chicago 4, Illinois.

PLANTS AT: Philadelphia, Pennsylvania; Quakertown, Pennsylvania; Lansdale, Pennsylvania; Bethlehem, Pennsylvania and Kingston, Pennsylvania.

PIONEERING SYNTHETIC YARNS FOR OVER 35 YEARS

150	24-40	Bright	.98	.91	.82	.82	.78
150	40	Semi-Dull	.98	.91	.82	.82	.78
150	40	Dull	...	...	.82	.82	.78
150	90	Dull	...	...	.83	...	.79
200	10-44	Bright	.97	.90	.81	.81	.77
250	60	Semi-Dull & Dull	.96	.89	.80	.80	.77
300	15	Bright	...	...	.82	.78	...
300	30	Dull Flat Filament	...	...	.85	...	...
300	44	Bright & Dull	.86	.79	.73	.73	.71
300	234	Dull	...	...	.83	...	.81
375	60	Bright	...	...	.72	.72	...
450	60-100	Bright	...	...	.76	.71	.67
600	100	Bright & Dull	...	...	.76	.69	.71
900	50-100-150	Bright	...	...	.76	.69	.71
1200	75	Bright	...	...	.76	.69	.71
2700	150	Bright	...	...	.76	.69	.71

Extra Turns Per Inch

75	30	Bright	6-Turns	\$1.49	\$1.39	\$1.24	\$1.24	\$...
100	40	Bright	6-Turns	1.36	1.26	1.17	1.17	1.09
150	40	Bright	6-Turns	1.20	1.10	.90	.90	...
200	44	Bright	6-Turns	...	1.01	.96	.96	...
300	15	Bright	5-Turns	...	...	.86	.86	...
300	44	Bright	4.3-Turns	...	...	.81	.79	...
300	44	Bright	6-Turns	.94	.87	.86	.86	.84
300	120	Rayflex	6-Turns	...	...	.93	.93	...
600	30	Bright	5-Turns	...	...	.84	.82	.80

Rayflex Yarns

75	30	Rayflex	\$	\$	\$1.22	\$1.22	\$1.13	...
100	40	Rayflex	...	...	1.07	1.07	.99	...
150	40-60	Rayflex	...	...	.85	.85	.81	...
200	75	Rayflex	...	...	.84	.84	.80	...
300	60-120	Rayflex	...	...	.75	.75	.73	...
450	120	Rayflex	...	...	.71	.71	.69	...
600	234	Rayflex	...	...	.71	.71	.69	...
900	350	Rayflex	...	...	.78	.71	.69	...

Thick & Thin Yarns

150	40-90	Bright & Dull	\$	\$	\$1.18	\$	\$	...
200	75	Bright & Dull	...	...	1.08	...	...	...
300	120	Bright & Dull	...	...	.98	...	...	...
450	100	Bright & Dull	...	...	.92	...	...	...
490	120	Bright & Dull	...	...	.96	...	...	...
900	350	Dull	...	...	1.03	...	...	...
920	120	Bright & Dull	...	...	1.03	...	...	...

Colorspun Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	\$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06
300	Regular Strength 5-Turns	1.19

Avicron Yarns

Avicron Yarns

Denier	Filament	Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply
2700	150-300-900	Singles & 2 Ply

Cones/Tubes
Beams/Spools

\$6.68
.65

Viscose Filament Yarns

The following material deposit charges are required:	...
Metal Section Beams	\$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Corp. of America

Current Prices

Effective June 24

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist	Beams	Cones	Cakes
75/30/3	.97	1.10	.98
100/40/2Z			
100/40/3		.96	.88
100/40/5		1.02	
100/60/2Z	NS	.96	
100/60/3		.98	.90
125/40/2Z	.93		
125/40/3		.94	
150/40/0	NS	.74%	.85
150/40/2Z	.81		
150/40/3		.79%	.76
150/40/5		.90	.86
150/40/8		.95	.91
150/90/0	NS	.77%	
250/60/0	NS	.74	
250/60/3		.80	.77
300/50/0	NS	.70	
300/50/2Z	.72		
300/50/3		.70%	.69
450/120/0	NS	.67	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective with orders June 24, 1959

Bright and Dull

Den.	Fil.	Turns/ Inch Up to	Cones (A)
40	20	3	Textile "Cordura"*
50	20	3	Textile "Cordura"
50	30	3	Textile "Cordura"
75	10	3	Bright
75	30	3	
100	15	3	Bright
100	40	3	Bright
100	60	3	Dull
125	50	3	
150	40	3	Bright
150	60	3	Bright
150	90	3	Bright
150	120	3	Bright
300	50	2.5	
450	72	3	
600	96	3	Bright
600	240	3	Textile "Cordura"
900	144	3	Bright
1165	480	3	Textile "Cordura"
1800	100	3	Bright
2700	150	3	Bright

Thick and Thin

100	40	3	#7 Bright	1.42
150	90	3	#7 Bright	1.08
200	80	3	#7 Bright	1.08
450	100	3	#7 Bright	.92
2200	240	3	#60 Bright	1.03

Monofil

150	1	3	Bright	1.35
300	1	3	Bright	1.15
600	1	3	Bright	1.00

300	30	3	Dull	.85
				.81

(A) 2¢/lb. additional for cones less than 3#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid, our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

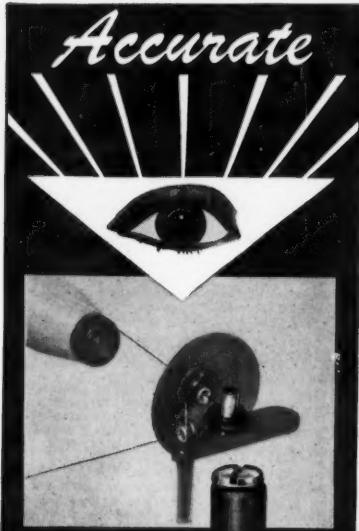
Industrial Rayon Corp.

Current Prices

Prices Effective July 3, 1959

Denier/Filament Normal Strength	Twist	Cones	No Twist Cones	4.4# Cones and Tubes
NARCO				
75/30		3.5		
75/30		7		
75/30		12		
75/30		15		
75/30		20		

Denier/Filament Normal Strength	Twist	Cones	No Twist Cones	Weaving Cones, Velvet Cones, Beams, Tubes** Cakes
NARCO				
75/30		3.5		
75/30		7		
75/30		12		
75/30		15		
75/30		20		



Yarn is under perfect tension from a central location. One dial adjustment changes tension uniformly at all tension stations.

The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.

DIAL CONTROL of YARN TENSION at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-SAVING, QUALITY-IMPROVING, COST-CUTTING LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

It Pays to Know  the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

George L. Staff has been named president of Pacific Mills' two sales organizations, Raeford Worsted Corp. and Pacific Mills Worsted Co., succeeding **Ely Callaway** who continues as executive vice president and merchandising director of all the manufacturing plants in the Pacific Mills' group.

Dr. Bruce B. Allen, Fletcher Horn, Peter H. Conze, and David Taylor have been appointed vice presidents of Celanese Fibers Co. **Harold M. Kennard** has been appointed assistant director of fabric merchandising of Celanese Fibers, succeeding **V. Herbert Fazio** who has been named marketing director of Celanese Colombiana, S. A., an affiliate of Celanese Corp. of America.

Richard J. Powers has been elected vice president and general counsel of Indian Head Mills, Inc.

Lee R. Jacobs has been appointed sales manager of industrial products at Acme Backing Corp.

Standish W. Holmes has been appointed merchandising director at American Enka Corp.

Clarence F. Gregory has been named technical sales service representative for rayon staple at American Viscose Corp.'s plant in Front Royal, Va.

William A. Hobbs has been elected to the board of directors of Industrial Rayon Corp., succeeding **Carl N. Osborne**. Mr. Hobbs is currently financial vice president, treasurer and a director of the M. A. Hanna Co.

Kenith Strunk has been elected vice president of research and engineering at the Wyomissing plant of Textile Machine Works.

Joseph H. Hamilton has been named president of Burlington Throwing Co., division of Burlington Industries, Inc. **John C. Gravlee, Jr.** has been appointed vice president in charge of sales and **Fred T. Paugh, Sr.**, vice president in charge of manufacturing.

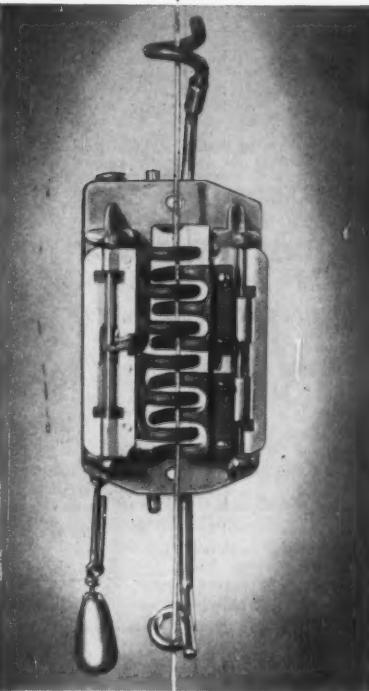
Death

Charles L. Schuttig, vice president and sales manager of Arkansas Co., Inc., Newark, N. J., died August 27, 1959, after a long illness. Schuttig joined Arkansas Company 25 years ago as a sales representative in the textile field, becoming widely known in the trade and advancing to a key position in the company. Prior to his position with Arkansas, Schuttig was with John Campbell & Co. and A. Klipstein Co.

try
HEANIUM

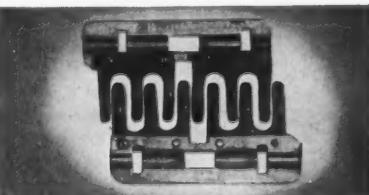


**HEANIUM TENSION FINGERS
AND PIGTAILS FOR TENSION
ASSEMBLIES ELIMINATE
YARN DAMAGE**



If guide wear is a problem in your mill...

try
**HEANIUM T-3-F
FINGER ASSEMBLIES**



HEANIUM INDUSTRIAL CERAMIC CORP.
NEW HAVEN 3, CONNECTICUT

Southern Representative: R. L. Carroll, P. O. Box 1676,
Greenville, S. C.

100/40/80	3.5	.96	.90
100/40	12	1.22	
125/25/80	3	.96	.87
150/42	0	.74 1/2	
150/42/80	3	.80 1/2	.78
300/75	0	.71	.82
300/75	3	.73	.71
900/46	2.5	.69	.69
1800/92	2.5	.69	.69

* Oiled Cones \$.01 per pound extra for Graded Yarns only.
** 1 lb. Tubes \$.02 per pound extra for Graded Yarns only.

Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.

Prices subject to change without notice.

TRIACETATE

Celanese Corp. of America

Current Prices Arnel Yarn Prices
Bright & Dull

Effective August 19, 1958

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/WKZ/15	\$. . .	\$1.16	\$. . .
55/2Z/15	1.32	.33	...
75/WKZ/20		1.16	...
75/2Z/20	1.21	1.22	...
100/2Z/26	1.14	1.15	...
150/2Z/40	.95	.96	...
200/2Z/40		...	...
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	...
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—\$.02 Additional Premium for Black Arnel—\$.25 Per Pound

Premium for Navy Arnel—\$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOUSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective December 19, 1958
Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.65
1230/480	High	.62
1650/720	Low	.56
1820/720	High	.56
2200/960	High & Low	.55

Denier	Elongation	Beams & Cones
1100/720	Low	.66
1650/1100	Low	.60
2200/1440	Low & High	.57

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River.

* Tyrex certified viscose yarn.

American Viscose Corp.

Effective March 26, 1959

Revised July 1, 1959

Tyrex

Tyrex Certified Viscose Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	0	.66	.66
1100	980	Z	.66	...
1650	980	0	.60	.60
1650	980	Z	.60	—

Tire Fabric Made with Tyrex Certified Viscose Tire Yarn and Cord

Denier	Filament	Carcass	Top Ply	Breaker
1100	980/2	.78	.78	.78
1650	980/2	.69	.70	.725

* Factor determined by dividing total ends by picks.

Tyrex is a cooperative trade-mark of Tyrex Inc. for Viscose Tire Yarn and Cord.

Rayon Tire Yarn

Yarn

Super "Rayflex"

Denier	Filament	Twist	High Strength	Tire Yarn	110-210-310	120-220-320
1100	490	Z	...	.62	...	...
1100	980	0-Z	...	.65	.66	...
1150	490	Z	.62	...	...	...
1230	490	Z	.62	...	...	...
1650	980	Z	.56	.56	.59	.60
1650	980	0	...	.56	...	.60
1875	980	Z	.56	...	.59	.60
2200	980	0	...	.55	...	.57
3300	1960	0	...	.55	...	.57

High Strength available on cones — tubes — beams.

Tire Yarn and Super "Rayflex"

0 twist — Available on cones, beams or 10# tubes.

Z twist — Available on beams.

Sewing Thread

1100/980 Super "Rayflex"	0-Z	Cones	.63
1780/980 Super "Rayflex"	0-Z	Cones	.58

Also available in colors at .07 premium.

All yarns sold "Not Guaranteed for Dyeing".

Rayon Tire Fabric

1100 490	Tire	.74	.74	.74
1100 980	Super-110-210-310	.77	.77	.77
1100 980	Super-120-220-320	.78	.78	.78

Factor* Open-525 300-490 115-275

1650 980	Tire	.65	.66	.685
1650 980	Super-110-210-310	.68	.69	.715
1650 980	Super-120-220-320	.69	.70	.725

* Factor determined by dividing total ends by picks.

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations — prices quoted on request.

When supplied, cones and cords in special packages take premiums indicated.

10.5 oz. Wardwell tubes

1.5 lb. Regular Braider tubes

Adhesive Dipped yarn

The following deposit charges are made on invoices.

Beams \$55.00 each

Crates (Metal) 75.00 each

Fabric Shell Rolls 3.50 each

Same to be credited upon return in good condition — freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of Mississippi River in which event only the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same. Prices subject to change without notice.

Celanese Corporation of America

Effective December 27, 1958

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	\$3.00 lb.	\$3.35 lb.
60/2.5/80	4 "	2.40 "	2.75 "
90/2.5/120	4 "	2.25 "	2.60 "
120/2.5/160	4 "	2.05 "	2.40 "
150/2.5/180	4 "	1.95 "	2.30 "
270/2.5/360	4 "	1.85 "	2.20 "
300/2.5/360	4 "	1.85 "	2.20 "

60/2.5/80 Olive Green—Spun Dyed—OG106 4 lb. Cones 3.50 lb.

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280		\$2.30			
300/280	0.8Z	\$2.05			
300/280	3Z	\$2.20			
400/400	0.8Z	\$1.75			
400/400	0			\$1.75	
800/800	0.8Z	\$1.25	\$1.25		\$1.20
800/800	3Z	\$1.40			
800/800	0			\$1.25	
1600/1600	0.8Z	\$1.15	\$1.15		\$1.10
1600/1600	2 1/2Z	\$1.30			\$1.15
2400/2440	0				

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corporation

Effective March 1, 1959

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

Turns

Denier Filament per Inch Beams 4.4# Cones

1100 490 2.0 "Z" .62 .62

1650 720 2.0 "Z" .56 .56

New Nylon Dyes

Fiber reactive disperse dyestuffs for dyeing nylon have been developed by Imperial Chemical Industries Ltd. of England, parent company of Arnold, Hoffman & Co., which is introducing them here. Arnold, Hoffman in 1956 pioneered the Procion range of fiber reactive water-soluble dyestuffs for traditional cellulosic fibers, together with wool and natural silk.

The new dyestuffs, called Procincyl, are being made in four initial dyes—yellow, orange, scarlet and blue. They can be used for all forms of nylon and other polyamide fibers, both staple and filament types, and including woven piece goods, knitted goods and hosiery, and on other synthetic fibers such as acetate, tri-acetate, polyesters and acrylics. They may be applied as necessary on the jig, on the dye kettle and in the paddle machine.

The outstanding advantage gained, according to Arnold, Hoffman, is greater wet fastness than is normally associated with the disperse range. Other results, the company said, compare with established disperse dyes: e.g. nylon and other polyamide fibers exhibit good leveling, good coverage of irregular dyeing yarns, good compatibility in admixture, excellent penetration. Furthermore, since the new dyes are inter-compatible, an extensive range of shades is possible. Also the dyer, can be relieved of some of his current problems in dyeing barre nylon, particularly when bulked yarns are used.

Popular use is anticipated in hosiery, lingerie, sweaters and wearing apparel where high wet fastness is required, as, for instance, garments with white trim. However, cautions Arnold, Hoffman, the Procincyl Dyes may not meet requirements when yarns and fabrics must meet stringent lightfastness standards—except for Polycincyl Yellow GS on polyester fibers which has high lightfastness and resistance to heat treatment.

*Those who say they can't
are usually right about it.*



We who are responsible for the high quality of **LAMBERTVILLE THREAD GUIDES**

never allow ourselves the luxury of believing that our product cannot be improved. Continual research in ceramic manufacturing techniques has made today's Lambertville porcelain guides the smoothest, hardest and most durable on the market. Available in white or "Durablu" finish.

Lambertville Ceramic
AND MANUFACTURING COMPANY
LAMBERTVILLE, NEW JERSEY
LAMBERTVILLE: YOUR GUIDE TO BETTER OPERATIONS!



2 SPEEDS 
SIMPLEST HOOK-UP!
VERSATILITY UNLIMITED!
CLEMENTS
Cadillac **QUIK-VAC®
MODEL 14**

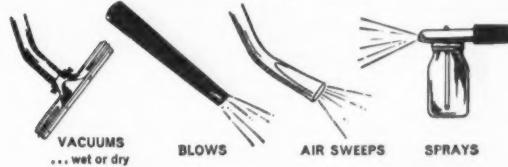
Makes quick work of any cleaning job—floor to ceiling. Picks up filings, chips, dirt, litter, liquids! Quickly converts for blowing operation.

2-SPEED MOTOR Exclusive . . . high speed for the tough jobs . . . reduced speed for cleaning delicate wiring or equipment!

3-in-1 HOSE COUPLER* Exclusive . . . Only one hose with coupler needed to connect to air outlet and two air intakes.

*Patent applied for.

FULL LINE OF OPTIONAL EQUIPMENT for hundreds of cleaning, maintenance and production jobs.



WRITE FOR NEW BULLETIN
OTHER MODELS AVAILABLE FROM 1 TO 55 GALLONS

Industrial Division
CLEMENTS MFG. CO.
6659 S. Narragansett Ave., Chicago 38, Ill.

SINCE 1910

Specialists in vacuum cleaning equipment
for home, business and industry.

2200	1000	2.0 "Z"	.55	.55
3300	1440	2.0 "Z"	.55	.55
4400	2000	2.0 "Z"	.55	.55

Type 400 prices are 4¢ more.

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points in continental United States except Alaska.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

Super Super High Strength			Cones	Beams
Continuous Yarn Type 710				
1100/720	1.6Z	.66		
1650/720	2.0Z	.60		

Tire Cord Fabrics

Super Super High Strength Type 710		Cones	Beams
1100/720			
1650/720			

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

CELLULOSEC STAPLE & TOW ACETATE

Celanese Corp. of America

Current Prices

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)	
Celanese Acetate Staple	
3, 5.5 & 8 Denier	
(Regular Crimp, Type HC, Type D)	\$.36
2, 12 & 17 Denier	
(Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	
%" to 1%" length (All Deniers)	.39
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	\$.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

CROSS-LINKED

Courtaulds (Alabama) Inc.

Effective April 14, 1959

Corvol™

Man-made, cross-linked, cellulosic staple, Bright and Dull, 1½, 3 and 5½ denier	\$.40 per lb.
---	----------------

Tope®

Man-made, cross-linked, cellulosic staple, Bright and Dull, 1½, 3 and 5½ denier	\$.37 per lb.
---	----------------

Terms: Net 30 days f.o.b. LeMoyne, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

RAYON

American Viscose Corp.

Current Prices

Rayon Staple

Regular	Bright and Dull	\$.33
"Viscose 22"		.33
Extra Strength		
1.0 Denier		.36
"Avisco XL"		
1.0 Denier		.42
1.5 & 3.0 Deniers		.39
"Avisco Crimped"		
1.25 Denier		.36
3.0 & 5.5 Deniers		.34
8.0 & 15.0 Deniers		.35
"Avisco Super L"		
8.0, 15.0 & 22.0 Deniers		.36

COLORSPUN STAPLE

1.5 Denier 1 9/16"

Color	Code	Price
Sea Foam	517	.47¢
Spun Gold	614	.47¢
Cascade	419	.42¢
Silver Gray	208	.42¢
Bridal Rose	710	.42¢
Pale Pink	708	.42¢
Rosewood	835	.47¢

Bisque	803	42¢
Champagne	833	42¢
Sandalwood	802	42¢
Apple Red	700	58¢
3.0 Denier 2"		
Mint Green	505	47¢
Pale Pink	708	42¢
Bisque	803	42¢
Sandalwood	802	42¢
Nutmeg	801	47¢
Gold	603	47¢
Turquoise	408	42¢
Wine	304	59¢
Gray	208	42¢
Spice Brown	800	47¢

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)

1.5, 3.0 & 5.5 Denier Per Filament	.35
9.0 Denier Per Filament	.37

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective 7/1/59

Rayon Staple

Regular

1.5 and 3 denier	Brt. \$.33	Dull \$.33
Crimped		
6.5 denier	.34	
8 denier	.35	
15 denier	.35	.35

Celanese Corp. of America

Current Prices

Effective May 1, 1959

Rayon Tow

Bright & Dull .35

1.5, 3, 5.5 D.P.F.	
Total denier 200,000	
8 D.P.F.	.37

Total denier 207,000

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Effective April 14, 1959

Rayon Staple

Bright \$.33 Dull \$.33

1 1/2 and 3 denier	
Available in 1 1/8", 1-9/16" and 2"	
3 and 5 1/2 denier	
Available in 1-9/16" and 3"	

3 denier	
Available in 2"	

Coloray® Solution Dyed Rayon Staple

Price per lb.

Black	39¢
Silver Grey	41¢
Mocha	41¢
Tan	41¢
Medium Brown	41¢
Aqua	42¢
Rose	42¢
Dawn Pink	42¢
Ecru	42¢
Dark Brown	42¢
Slate Grey	45¢
Sulphur	46¢
Nugget	46¢
Light Blue	46¢
Crystal Blue	47¢
Apple Green	47¢
Sage	47¢
Peacock Blue	48¢
Medium Blue	50¢
Indian Yellow	51¢
Dark Blue	51¢
Hunter Green	51¢
Turquoise	52¢
Malachite Green	53¢
Red	58¢

In addition to the above, Black is also available in:

1 1/2 den. 1 1/8" 5 1/2 den. 3"

3 den. 1-9/16" 5 1/2 den. 6"

3 den. 1-9/16"

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford Carpet Co., Inc.

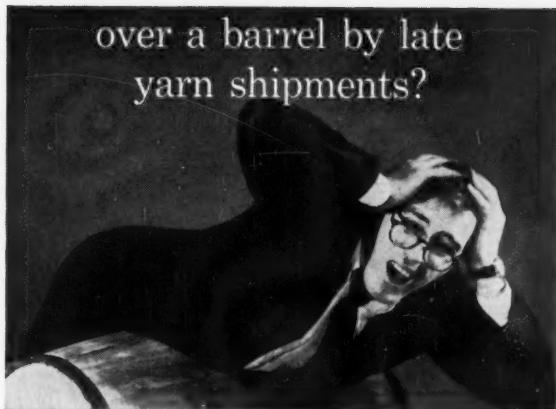
Rayon Staple

Effective November 3, 1958

REGULAR

1.5 denier Bright	
1 9/16", 2"	.33
VISCALON 66 (Crimped)	
8 denier 3" Bright	.35
15 denier 3" Bright	.35
15 denier 3" Dull	.35

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"



over a barrel by late
yarn shipments?

*Malina delivers when promised...
from the country's largest selection of*

RAYON • NYLON • ACETATE YARNS
graded and inferiors—all put ups.

MALORA* METALLIC YARNS
supported and unsupported

THROWN YARNS

HELANCA* STRETCH YARNS
NYLON • DACRON



* T. M.
125 WEST 41ST STREET, NEW YORK 36, LONGACRE 3-4200

Taiwan Polyester Plant

China Artificial Fiber Corp. has contracted with Efem G.m.b.H. of Darmstadt, Germany, an affiliate of Von Kohorn International Corp., White Plains, N. Y., to set up a \$2 million polyester yarn and fiber plant which will be the first synthetic fiber plant in that part of the world. Output of the plant will be at the rate of 1,000,000 pounds annually, with production scheduled to start late next year.

The Taiwan firm was formed several years ago with a financial participation of the Von Kohorn interests and represents the first investment made by an American company in a manufacturing industry in Taiwan under the Foreign Investment Guaranty Program of the U. S. Government. The original plant, built by Von Kohorn for China Artificial Fiber Corp. about three years ago, is Taiwan's only viscose rayon yarn and staple producer.

Gains by Cotton

Cotton scored competitive gains during 1958 in apparel and industrial uses and maintained its previous year's share of the household market, according to a study of the National Cotton Council. The five major uses of cotton in 1958, in order of size, were: men's and boys' trousers, 723,000 bales; men's and boys' shirts, 620,000 bales; sheets, 443,000 bales; towels and toweling, 372,000 bales; and drapery and upholstery fabrics, 347,000 bales.

The Council also reported that growth in male population and a high rate of employment are the primary factors in a favorable long-term demand for work clothing.

American Enka Anniversary

American Enka Corp. recently celebrated its 30th anniversary of production. Enka's first spinning unit, producing rayon, went into production at the company's Enka, N. C., plant on July 1, 1929. Over the years the company has grown and is now the nation's second largest producer of rayon as well as a substantial manufacturer of nylon and Tyrex, the new viscose tire yarn.

Manufacturing operations have now spread to two states and also to three others through company subsidiaries, pushing the corporation's plant investment, originally around \$10,000,000, to well above \$120,000,000. As the rayon operation grew it was joined by facilities for Enka's entry into the nylon field. The company has put up a \$2,000,000 research center. Also currently under construction is a modern corporate office building to house most of the administrative offices now located in New York City, and an expansion of nylon facilities at a cost of \$9,300,000.

American Enka's net income in the first half of 1959 rose sharply to \$3,484,000 or \$2.64 per share, compared with only \$4,700 in the corresponding 1958 period. Net sales in the first half rose to a new high for the company—\$49,997,000 compared with \$27,587,000 in the first half of 1958. William Gage Brady, Jr., chairman and president, told stockholders the company's rayon filament yarn and nylon plants are currently operating at capacity, and further increases have been made in Tyrex viscose yarn production in order to meet strong customer demand.

Enka recently developed a new cellulosic fiber, tentatively called Enka Fiber 500, which enables the production of fabrics of low shrinkage that are also capable of permanent stabilization against shrinkage. Enka also has a diversification program, and recently acquired firms which manufacture high frequency insulation and plastic covered wire and cable.

in yarn dyeing aiming
to please...is NOT enough!



ATLANTIC "hits the mark" for
color accuracy every time!

YARN DYEING

Rayon • Nylon • Acetate • Stretch Yarns
Cakes • Packages • Skeins

Custom-matched colors. Large dye batches.
Any degree of color fastness. Packaged as desired.

PROMPT DELIVERY

Atlantic
Rayon Corporation

125 WEST 41ST ST., NEW YORK 36, LONGACRE 3-4200
PLANT: 86 CRARY ST., PROVIDENCE, R. I.

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.46	.46	.....
Sandalwood	.46	.46	.....
Nutria	.46	.46	.....
Sea Green	.46	.46	.....
Mint Green	.46	.46	.....
Champagne	.46	.46	.....
Midnight Black	.46	.....	.46
Gold	.49	.49	.....
Turquoise	.46	.46	.....
Melon	.49	.49	.....
Capri Blue	.46	.46	.....
Charcoal Grey	.46	.46	.....
Coco	.47	.47	.....
Sable	.48	.....	.48
Tangerine	.66	.....	.66
Chinese Red	.66	.....	.66
Larkspur Blue	.46	.46	.....
Royal Blue	.66	.....	.86
Lemon Peel	.55	.55	.....
Kelly Green	.55	.55	.....
Bitter Green	.66	.....	.86

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

	Rayon Staple	Bright
Super High Tenacity		
No. 1 (Unshrunken)		
1, 1.5 & 3 deniers	.40	.....
No. 2 (Preshrunk)		
1, 1.5 & 3 deniers	.40	.....

	Rayon Tow	
Super High Tenacity		
2200 denier, 1.0 and 1.5 D/F	57.5	
4400 denier, 1.0 and 1.5 D/F	47.5	

TRIACETATE

Celanese Corp. of America

Current Prices

Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

Arnel Staple and Tow

	Bright & Dull
Arnel Trisacetate Staple	\$25
2.5 Individual Denier	.55
5.0 Individual Denier	.....
Arnel Trisacetate Tow	.....
2.5 Individual Denier	\$.60
2.5 Individual Denier 114,000 Total Denier	.....
5.0 Individual Denier	.60
90,000 Total Denier or 180,000 Total Denier	.....

Packaged on Ball Wires

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOUS YARN NYLON

Allied Chemical Corporation

Caprolan®

Effective August 17, 1959

Denier	Filament	Turn/	In.	Twist	Type**	Package	1st Grade Price/Lb.
200	16	1 1/2	Z	H	Cone	\$1.49	
840	136	1/2	Z	HBT	Aluminum Tube	1.06	
840	136	1/2	Z	HBT	Beams	1.06	
1050	56	1/2	Z	HB	Aluminum Tube	1.15	
2100	112	1/2	Z	HB	Aluminum Tube	1.11	
Heavy Yarn							
2100	408	0	O	HB	Paper Tube*	1.06	
2500	408	0	O	HB	Paper Tube*	1.06	
3360	544	0	O	HB	Paper Tube*	1.05	
4280	680	0	O	HB	Paper Tube*	1.05	
4200	224	0	O	HB	Paper Tube*	1.10	
5000	816	0	O	HB	Paper Tube*	1.05	
5800	952	0	O	HB	Paper Tube*	1.05	
7500	1224	0	O	HB	Paper Tube*	1.04	
10000	1632	0	O	HB	Paper Tube*	1.04	
15000	2448	0	O	HB	Paper Tube*	1.04	

Terms—Net 30 days.

Prices subject to change without notice.

All prices quoted F.O.B. Shipping Point.

Following are invoiced as a separate item.

Bobbins—45 cents each.

Aluminum Tubes—40 cents each.

Beams—\$220.00 each.

Cradles for Beams—\$53.00.

* Paper Tubes non-returnable, no charge.

** Type is used to describe luster and tenacity.

Minimum transportation charges allowed and prepaid in continental United States, excluding Alaska.

B—Bright.

H—High Tenacity.

T—Heat Stabilized.

American Enka Corporation

Enka Nylon Yarn Prices

Effective August 19, 1958

Den/Fil	Twist	Luster	Type	Tenacity	Pkg.	Net Wt. Pkg.	Price/Pound Std.	Sub.
15 monofil	0.5Z	Semi-dull	9506	Normal	Pirn	2 lb.	\$2.25	5.00
15 monofil	0.5Z	Semi-dull	9506	Normal	Beam	2 lb.	5.36	5.05
15 monofil	0.5Z	Dull	9514	Normal	Pirn	2 lb.	5.41	5.41
15 monofil	0.5Z	Dull	9514	Normal	Beam	1 lb.	2.62	2.42
18/2	0.5Z	Semi-dull	9518	Normal	Pirn	1 lb.	4.95	4.50
18/2	0.5Z	Semi-dull	9524	Normal	Pirn	1 lb.	5.55	5.05
20/2	0.5Z	Semi-dull	9478	Normal	Pirn	1 lb.	2.26	2.21
30/4	0.5Z	Semi-dull	9464	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	9448	Normal	Beam	2 lb.	2.01	1.91
40/10	0.5Z	Dull	9502	Normal	Pirn	2 lb.	2.06	1.96
40/10	0.5Z	Dull	9502	Normal	Beam	2 lb.	2.16	.....
50/13	0.5Z	Semi-dull	9528	Normal	Pirn	2 lb.	1.91	1.76
70/32	0.5Z	Semi-dull	9622	Normal	Pirn	2 lb.	1.71	1.66
100/32	0.5Z	Semi-dull	9652	Normal	Pirn	2 lb.	1.65	1.60
200/16	0.5Z	Bright	9826	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	9826	Normal	Beam	1 lb.	1.54	.....
200/34	0.5Z	Bright	9832	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	9832	Normal	Beam	1 lb.	1.54	.....
260/16	0.5Z	Bright	9197	Normal	Cone	4 lb.	1.49	1.39
260/34	0.5Z	Bright	9197	Normal	Beam	4 lb.	1.49	1.39
520/32	0.6Z	Bright	9546	Normal	Cone	4 lb.	1.39	1.29

Piorns charged at \$2.25 or \$4.50 each, depending on type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination in the continental United States. In preparing transportation charges, the seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective June 2, 1958

Denier	Filament	Twist	Type*	Package	Standard Price/Lb.	Second Price/Lb.
10	1	O	SD	Bobbins	\$8.42	7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	SD	Spools	5.36	.....
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	.....
20	7	Z	D	Bobbins	2.96	2.61
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	D	Bobbins	2.41	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	10	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Bobbins	2.01	1.91
40	13	Z	D	Spools	2.16	1.96
50	17	Z	SD	Bobbins	1.91	1.76
50	17	Z	SD	Draw Wind	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	O	SD	Draw Wind	1.71	1.66
70	34	Z	SD	Spools	1.81	.....
70	34	Z	B	Bobbins	1.71	1.66
70	34	O	B	Draw Wind	1.71	1.66
70	34	Z	D	Bobbins	1.76	1.66
70	34	Z	D	Spools	1.86	.....
70	34	Z	HB	Bobbins	1.76	1.66
80	26	Z	SD	Bobbins	1.71	1.60
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	SD	Spools	1.75	.....
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	SD	Spools	1.70	.....
200	34	Z	B	Bobbins	1.49	1.44
200	34	Z	SD	Draw Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	1.44
210	34	Z	SD	Draw Wind	1.49	1.44
210	34	Z	SD	Spools	1.54	.....
210	34	Z	SD	Beams	1.59	1.54
210	34	Z	SD	Tubes	1.06	1.01
210	34	Z	SD	Cones	1.10	1.01
1040	68	Z	SD	Tubes	1.15	1.05
1040	68	Z	SD	Beams	1.06	1.01
1040	280	Z	SD	Tubes	1.03	.98
1680	280	Z	SD	Tubes	1.11	1.01
2080	136	Z	SD	Tubes	1.11	1.01
15120	2520	Z	RHB	Tubes	1.04	.....

* Types: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity. Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at \$7.00 and \$9.00 depending on type; and beams and crates for beams are invoiced at \$220 and \$225 respectively.

Prices subject to change without notice.

Freight prepaid within Continental United States and Puerto Rico.

Thal in Russia

(Continued from Page 35)

Alamac's plant and explained to them through an interpreter how knit cloth is manufactured in the United States. As a result of his willingness to show his plant to the Russians, they lost no time in inviting him to visit their Moscow plant once he arrived in the Russian capital.

Fabrics produced at the Moscow mill are of good quality but old-fashioned and unimaginative in styling. They are like the knit goods produced in the United States 50 years ago, Thal says. He was given two books of swatches of fabrics produced at the plant and he has them now on his desk at his New York office where they serve as intriguing conversation pieces.

In his day-long study of the Russian knitting operation Thal was appalled at the slowness and inefficiency of the plant. Most of the workers were women, he said, and the Russian management had four times as many workers per machine than are used in the United States. Machine productivity also seemed to be far slower than in this country.

The most astonishing fact that Thal learned was that the mill worked only one eight hour shift a day. For the remaining 16 hours in every 24 the machinery was stopped and the mill closed down tight — and this in a country where the acute shortage of apparel and other textile consumers' goods is freely admitted by the government.

Asked why the plant only worked one shift, high-ranking management men said that it was because of a shortage of orders. But Thal believes that the one-shift operation was due to shortage of yarn and other necessary materials as a result of unwieldy bureaucratic planning at higher levels in the Russian Ministry of Light Industry.

Workers in the plant work eight hours five days a week and six hours on Saturdays for a total of 46 hours a week. In terms of the purchasing power of the ruble, the average wage Thal estimates to be the equivalent of about \$30 a week.

As an overall residual impression of what he saw in his tour of the Russian knitting mill, Thal believes that what is holding the Russians back is not so much old machinery as the rigid bureaucratic control of all industry exercised by the government. What the Russians need to speed up their productivity and the upward trend in their standard of living is more freedom to exercise initiative, he believes. They need incentives, he thinks; they need freedom to exercise authority at a plant level and the freedom to use imagination in styling and merchandising their goods. Above all, he is convinced, the able, ambitious men in their industries need the freedom from the demoralizing burden of bureaucratic control exercised by unwieldy state planning commissions and other rigid, government departments.

Thal found the Russians he met cordial and friendly toward Americans and America. They are eager to know more about the United States, eager to talk to Americans, he reports. Visits such as his and exhibitions as the American National Exhibition in Moscow help to win friends for the United States among ordinary Russians, he believes, in spite of the hostile propaganda poured out by the Soviet Government. ■



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With summer weather past, now's the time for new DIAMOND FINISH rings. Aim for better running work. Bag the added production that's tied down in your machinery by worn rings.

P.S. We have ample STEEL to fill orders promptly.

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NO YARN TRAPPING WITH BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN



New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.



ALLENTEOWN BOBBIN WORKS, INC.
ALLENTEOWN **PENNSYLVANIA**

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/ Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	\$9.47	\$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Beam	5.36	—
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Beam	5.41	—
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.95	4.50
14-2	0.2Z	200	Bobbin	7.90	7.30
17-2	0.2Z	200	Bobbin	7.05	6.50
20-2	0.2Z	200	Bobbin	5.55	5.05
15-3	0.2Z	200	Bobbin	6.10	5.60
21-3	0.2Z	200	Bobbin	5.48	5.05
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Beam	3.02	—
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Beam	3.07	—
20-20	0.7Z	200	Bobbin	6.00	—
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms	2.46	—
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms	2.51	—
30-26	0.5Z	200	Bobbin	2.49	2.21
40-1	0	100	Bobbin	4.03	3.75
40-7	0.5Z	200	Bobbin	2.11	1.91
40-10	0.5Z	200	Bobbin	2.01	1.91
40-10	0.5Z	200	Tricot Beams	2.11	—
40-13	0.5Z	200	Bobbin	2.01	1.91
40-13	0.5Z	200	Tricot Bms	2.11	—
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Tricot Bms	2.16	—
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	100/200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
60-20	0.5Z	200	Bobbin	1.82	1.65
60-34	0.5Z	300	Bobbin	1.86	1.76
70-17	0.5Z	200	Bobbin	1.71	1.56
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	280	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.60
90-26	0.5Z	200	Bobbin	1.76	1.60
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	100	Bobbins	1.60	1.35
140-68	0	200	Tubes	1.60	1.35
140-68	0.5Z	200	Bobbin	1.60	1.35
140-68	0	205	Tube	1.60	1.35
140-68	0.5Z	300	Bobbin	1.65	1.35
200-20	1Z	100	Bobbin	1.49	1.44
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0	105	Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100	Bobbin	1.56	1.46
210-34	0	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	—
210-34	0	305	Tube	1.49	1.44
210-34	0.7Z	330	Bobbin	1.50	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Beams	1.39	1.29
520-34	1Z	300	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300	Al. Tbs. & Beams	1.06	1.01
1680-280	0.5Z	700	Al. Tbs. & Beams	1.03	.70

Color-Sealed Yarn

Denier & Filament	Turns/ Inch	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	\$2.71	\$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.95
100-34	0	140	Tubes	2.00	1.95
200-20	0.7Z	140	Bobbin	1.84	1.79
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79
840-140	0.5Z	707	Cone	\$1.04	—
2520-420	0	700	Paper Tube	1.06	—
4200-700	0	700	Paper Tube	1.05	—
5040-840	0	700	Paper Tube	1.05	—
7560-1260	0	700	Paper Tube	1.04	—
10080-1680	0	700	Paper Tube	1.04	—
15120-2520	0	700	Paper Tube	1.04	—

These prices are subject to change without notice. Terms: Net 30 Days.

Types

- Type 100—Bright, normal tenacity
- Type 105—Bright, normal tenacity, low shrinkage (5-7%)
- Type 140—Bright, color-sealed, black, normal tenacity.

Type 200—Semidull, normal tenacity.

Type 205—Semidull, normal tenacity, low shrinkage (5-7%)

Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.

Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.

Type 300—Bright, high tenacity.

Type 305—Bright, high tenacity, low shrinkage (5-7%)

Type 330—Bright, high tenacity, more heat & light resistant.

Type 400—Semidull, high tenacity.

Type 680—Dull, normal tenacity.

Type 700—Bright, high tenacity.

Type 707—Bright, high tenacity (over 8.5 gpd) cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.

Bobbins—25 cents or 45 cents depending on type

Aluminum Tube—40¢ each

Draw Winder Tubes—\$.70 or \$1.00 depending on type

Tire Cord Beams—\$220 each

Cradles for Tire Cord Beams—\$115.00 each

Tricot Beams—\$85.00 each

Cradles for Tricot Beams—\$130.00 each

(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

"Dacron"**

Denier & Filament	Turns/ Inch	Luster	Type*	Tubes 1st Gr.
30-14	0	Bright	55	\$2.71
30-20	0	Semidull	56	2.71
40-27	0	Semidull	56	2.31
40-27	0	Bright	55	2.31
40-27	0	Dull	57	2.36
70-34	0	Semidull	56	1.91
70-14	0	Bright	55	1.91
70-34	0	Bright	55	1.91
70-34	0	Dull	57	1.96
100-34	0	Semidull	56	1.84
140-28	0	Bright	55	1.79
150-34	0	Semidull	56	1.79
220-50	0	Bright	51	1.76
250-50	0	Bright	55	1.76
1100-250	0	Bright	51	1.50
1100-250	0	Bright	52	1.50

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

Tubes are invoiced as a separate item at \$.70 each.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

** For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. l.	Natural	Colors
1240/10	3	\$1.32	\$1.37
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

NON CELLULOSIC STAPLE & TOW ACRYLIC

American Cyanamid Co.

Fibers Division

Effective Date: June 15, 1959

Cyanamid Acrylic Staple

1st Grade
Price
(per pound)

2.0 Denier Bright and Semi-Dull	\$1.28
3.0 Denier Bright and Semi-Dull	1.18
5.0 Denier Bright and Semi-Dull	1.18
15.0 Denier Bright, Semi-Dull and Dull	1.01

Staple Lengths: 1½", 2", 2½", 3", 3½", 4", 4½".

Information provided on request for Deniers, Lengths and Lusters not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

Current Prices

"Acrilan"*

Effective January 1, 1959

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dull and Bright staple & tow	\$1.24	\$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.18	1.18
3.0 denier Bright & Semi-dull staple & tow	1.18	1.18
5.0 denier Bright & Semi-dull staple & tow	1.18	1.18
8.0 denier Bright & Semi-dull staple & tow	1.18	1.18
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid within Continental U. S. & Puerto Rico.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department

Current Prices

"Zefran"**

2.0 denier Semidull & Bright—Staple only	\$1.28
3.0 denier Semidull & Bright—Staple only	1.28
6.0 denier Semidull & Bright—Staple only	1.18

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* "Zefran" is Dow's registered trademark for its acrylic fiber.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"*** Acrylic Staple & Tow

Type	42	Staple Length	Tow	1st Bids.	Grade
1.0 Denier Semidull		1 1/4, 1 1/2, 2, 2 1/2, 3	380M	\$1.28	
2.0 Denier Semidull & Bright		1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.28	
3.0 Denier Semidull & Bright		1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.28	
3.0 Denier Semidull Color-sealed Black		1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.28	
Black		1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.63	
6.0 Denier Semidull & Bright		1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.18	
6.0 Denier Color-sealed Black		1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.55	
4.5 Denier Semidull		1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.18	
10.0 Denier Semidull & Bright		1 1/2, 2, 2 1/2, 3, 4 1/2	470M	1.18	
Tow—Total Denier 470,000					

Staple Lengths—1 1/4", 2", 2 1/2", 3", 4 1/2"

High Shrinkage Staple price as Regular Staple

Type 25 \$1.18
This product is designed for Cotton/Rayon System Spinning and is 2.5 denier, 1 1/4" semidull regular shrinkage staple.

Type 38—4. Denier—Semidull—520M Tow \$1.28
This product can be dyed, stretched and cut to produce staple which will shrink as much as 38% when subjected to heat.

Type 39 \$.94
This product is designed for woolen system spinning and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A \$.99
This product is designed for woolen system spinning and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B \$.94
This product is designed for woolen system spinning and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

MODACRYLIC

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 3, 1958

"Verel"** Staple and Tow

Deniers	2 and 3	Dull and Bright
5, 8, 12, 16, and 20	.92	
24 denier	.97	

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective October 1, 1957

Dynel Staple & Tow

Natural Dynel		
3, 6, and 12 Denier, Staple and Tow	1.10 per lb.	
24 Denier, Staple and Tow	1.05 per lb.	
Dynel Spun with Light Colors:		
Blond or Gray		
3 and 6 Denier, Staple and Tow	1.30 per lb.	
Dynel Spun with Dark Colors:		
Black, Charcoal, Brown, Caramel, Green, and Blue		
3 and 6 Denier, Staple and Tow	1.40 per lb.	
Dynel Type 63 High Shrinkage (3 Denier only)	Add \$.05 per lb. to above prices	

Prices are quoted f.o.b. South Charleston, W. Va.

NYLON

American Enka Corp.

Effective August 19, 1958

Enka Nylon (Nylon Six Staple)

Denier	Luster semi-dull	Length (Inches)	Price per pound
3		1 1/2, 1 3/4, 2, 2 1/2, 3, 4 1/2	\$1.28
6	bright	3, 4 1/2	1.28
8	bright	2 1/2	1.15
10	bright	3	1.08
15	bright	3	1.08
15	semi-dull	3	1.08

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination in the continental United States. In prepaying transportation charges, the seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1 1/2—4 1/2"	None made	\$1.33	\$1.18
1.5	201	1 1/2—4 1/2"	None made	1.35	1.20
2.2	420	1 1/2" only	None made	1.28	1.13
3.0	100/200	1 1/2—4 1/2"	430M	1.28	1.13
3.0	101/201	1 1/2—4 1/2"	455M	1.30	1.15
6.0	100	1 1/2—6 1/2"	330M	1.28	1.13
6.0	101	1 1/2—6 1/2"	345M	1.30	1.15
15.0	100	1 1/2—6 1/2"	425M	1.08	...
15.0	101	1 1/2—6 1/2"	None made	1.10	...
15.0	600	1 1/2—6 1/2"	425M	1.10	...
15.0	601	1 1/2—6 1/2"	None made	1.12	...

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1 1/2, 1 1/4, 2, 2 1/2, 3, 4 1/2 and 6 1/2"

Types

Type 100 Bright, normal tenacity, not heatset.

Type 101 Bright, normal tenacity, heatset.

Type 200 Semidull, normal tenacity, not heatset.

Type 201 Semidull, normal tenacity, heatset.

Type 420 Semidull, high tenacity, high modulus, no crimp.

Type 600 Dull normal tenacity, not heatset.

Type 601 Dull normal tenacity, heatset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Industrial Rayon Corp.

Effective August 18, 1958

Nylon Staple

1.5 denier		\$1.33 per lb.
2, 3 and 6 denier		1.28 per lb.
8 denier		1.15 per lb.
15 and 22 denier		1.08 per lb.

Bright, semi-dull, and full-dull. Required lengths.

(Deniers and lengths of staple not listed above are available upon special request.)

Terms: Net 30 Days.

F.O.B. Shipping Point (Avon Lake, Ohio) Minimum freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if overland, or port of exit of purchaser's choice east of the Mississippi River.

POLYESTER

Beaunit Mills Inc.

"Vycron"

Polyester P-23 (Semi-Dull)

Current Prices April 13, 1959

Denier	Cut*	Per Lb.
1.5	1 1/2"	\$1.36
3.0	2"	1.36

(* Can be cut to other lengths when desired).

Tow for Converters (Tow Bundle 200,000 Den.) 1.5 den. 3.0 den.

Tow Yarn for Direct Spinners 1.5 den. (1680/1120) 1.45

1.5 den. (3360/2240) 1.36

3.0 den. (3360/1120) 1.36

Coarse Denier Yarns, No-Twist Tubes

	1.5 Denier	3.0 Denier	
420/280	420/140	1.65	
840/560	840/280	1.60	
1260/840	1260/420	1.50	
1680/1120	1680/560	1.45	
3360/2240	3360/1120	1.36	

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"** Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1 1/4"-3"	None made	\$1.36
1.5	Semidull	64	Tow only	550M	1.41
1.5	Semidull	54	1 1/4"-3"	550M	1.36
			& Tow		
3.0	Semidull	64	1 1/4"-4 1/2"	450M	1.41
			& Tow		
3.0	Semidull	54	1 1/4"-4 1/2"	450M	1.36
			& Tow		
3.0	Semidull	61	1 1/4"-4 1/2"	None made	1.36
4.5	Semidull	64	1 1/4"-4 1/2"	450M	1.36
			& Tow		
4.5	Semidull	54	1 1/4"-4 1/2"	450M	1.31
			& Tow		
6.0	Semidull	64	1 1/4"-4 1/2"	450M	1.36
			& Tow		
6.0	Semidull	54	1 1/4"-4 1/2"	450M	1.31
			& Tow		
6.0	Semidull	61	1 1/4"-4 1/2"	None made	1.31

* Type:

Type 54—Semidull, Normal Tenacity.

Type 61—Industrial Staple Having 45% Shrinkage, Not Intended for Dyeable Uses.

Type 64—Pill Resistant more Dyeable Staple Primarily for Suiting Fabrics.

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

Eastman Chemical Products, Inc.

Tennessee Eastman Co. Effective September 15, 1958

"Kodel"**

1 1/4 denier	\$1.60
3 and 4 1/2 denier	1.50

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

** "Kodel" is a trade-mark of the Eastman Kodak Company.

VINYON

American Viscose Corp. Effective October 1, 1956

Avisco Vinyon Staple

3.0 denier	1/8" unopened	\$.80 per lb.
3.0 "	1 1/4" unopened	.80 per lb.
3.0 "	1 1/4" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3 1/4" opened	.90 per lb.
5.5 "	3 1/4" unopened	.80 per lb.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

Current Prices:

Saran Staple

Type	Denier	Natural	Colors
2N	22	\$0.70	\$0.75
2N	16	.74	.79
3Q"	22	.68	.72

In any staple length 1 1/2 to 6". Also 45 denier, 7" cut.

* For carpets and industrial fabrics.

F.O.B. Odenton, Maryland.

Terms: net 30 days.

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Polyester Tire Cord

Firestone Tire & Rubber is researching the use of Dacron and Terylene polyester fibers in tire cord for premium quality tires. The announcement, by president Raymond C. Firestone, marked the completion of one phase of the development program which proved, he said, that Dacron and Terylene as tire cords are equal or superior to any fiber now used in premium tires. Next, passenger car fleets in various parts of the country are to be equipped with the new tires and the results compared with earlier findings. Commercial production is not yet planned, but the company expects the 100% Dacron tire cord to be competitive in price with nylon and rayon, when it is marketed.

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Business Service

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Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

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Calendar of Coming Events

Oct. 1-2—Textile Quality Control Association fall meeting. Grove Park Inn, Asheville, N. C.	Nov. 11-15—National Association of Waste Material Dealers fall meeting. Diplomat Hotel, Hollywood Beach, Fla.
Oct. 3—Georgia Textile Operating Executives fall meeting. Georgia Tech, Atlanta, Ga.	Nov. 18—Tufted Textile Manufacturers Association interim Workshop meeting. Patten Hotel, Chattanooga, Tenn.
Oct. 7—Chemical-Finishing Conference, sponsored by National Cotton Council. Mayflower Hotel, Washington, D. C.	Dec. 2—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 7-9—AATCC annual convention. Sheraton-Park and Shoreham Hotels, Washington, D. C.	1960
Oct. 8-9—N. C. Textile Manufacturers Association annual convention. Carolina Hotel, Pinehurst, N. C.	Jan. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 8-9—Southern Textile Methods & Standards Association fall meeting. Clemson House, Clemson, S. C.	Feb. 2-4—SPL Reinforced Plastics Division conference. Edgewater Beach Hotel, Chicago, Ill.
Oct. 10—Alabama Textile Education Foundation meeting. Student Union Building, Auburn, Alabama.	Feb. 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 10—Alabama Textile Operating Executives fall meeting. Langdon Hall, Auburn, Ala.	Feb. 8-9—National Cotton Council annual convention. Dallas, Texas.
Oct. 14—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.	Mar. 2—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 15-16—Quartermaster Association, annual national convention. Hotel Statler-Hilton, New York, N. Y.	Apr. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 17—Textile Education Foundation, Inc. annual meeting. A. French Textile School, Atlanta, Ga.	Apr. 6-9—ACMI annual meeting. Americana Hotel, Bal Harbour, Fla.
Oct. 19-23—National Safety Congress and Exposition. Conrad Hilton, Chicago, Ill.	Apr. 7-9—American Cotton Manufacturers Institute annual convention. American Hotel, Bar Harbor, Fla.
Oct. 20-22—ASME-ASLE Lubrication Conference. Sheraton-McAlpin, New York, N. Y.	May 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 27-28—Institute of Textile Technology. Meeting of Technical Advisory Committee and Board of Trustees. Charlottesville, Va.	May 23-27—American Textile Machinery Exhibition. Auditorium, Atlantic City, N. J.
Nov. 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.	May 31-Jun. 2—Cotton Research Clinic. Grove Park Inn, Asheville, N. C.
Nov. 9-10—Narrow Fabric Institute annual meeting. Hotel Biltmore, New York, N. Y.	Jun. 1—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
	Jun. 23-25—Southern Textile Association annual convention. Grove Park Inn, Asheville, N. C.
	Oct. 3-7—Southern Textile Exposition. Textile Hall, Greenville, S. C.
	Oct. 6-8—AATCC national convention. Sheraton Hotel, Philadelphia, Pa.

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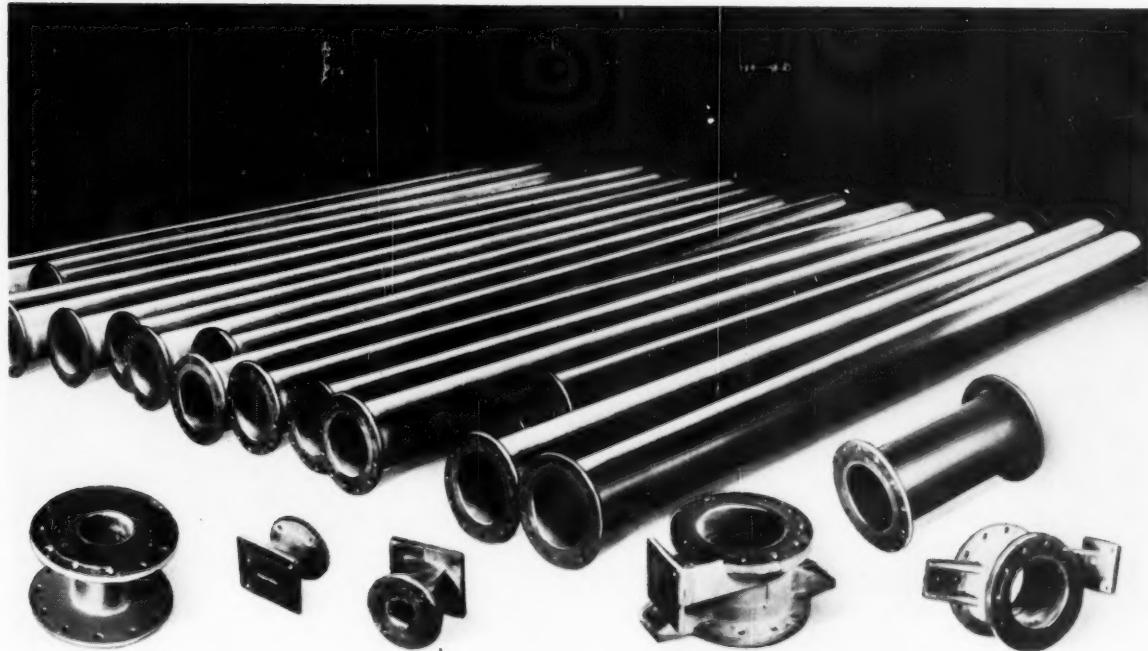
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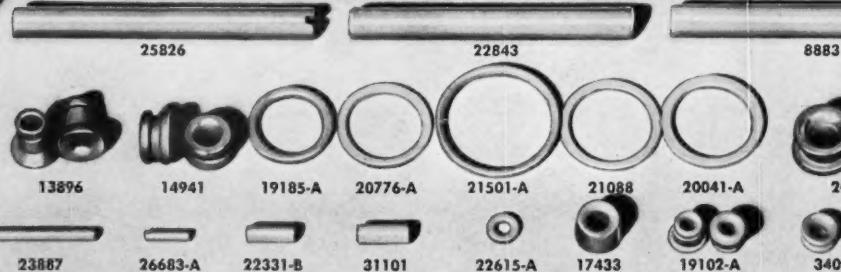
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